

## California State Journal of Medicine.

Owned and Published Monthly by the  
Medical Society of the State of California

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Secretary State Society, - - - - - Butler Building,  
State Journal, - - - - - San Francisco.  
Official Register, - - - - -

Telephone Douglas 2537

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VOL. XI OCTOBER, 1913. No. 10

### EDITORIAL NOTES

#### A CONSIDERABLE MESS.

At the time of writing, no Board of Medical Examiners has been appointed under the "new" and wonderful law. This brilliant piece of legislation calls for the new board to meet and organize on the first Tuesday of September, which was the second day of that month, but as no board has been appointed there has been no organization, no methods of procedure formulated and nobody knows anything definite as to the status of medical licensure in California. Of the old board, nine members have not resigned and it may be presumed that they are still members of "a" Board of Medical Examiners; but under which law? What is the medical law of this state? Is it the old law or the new law? Why has the governor failed to appoint a new board to administer his new law? It is rumored about that the Attorney General is of the opinion that the nice new law is unconstitutional; it is also rumored that the governor makes no appointments for the reason that as soon as a new board is appointed, certain persons will bring an action in the courts to have the law set aside. Almost every section of this freak law contains errors of omission and commission which our attorney is quite sure are unconstitutional or at least serious defects which can only be interpreted by the courts. The situation is amusingly Gilbertian! Have we a law, and if so, which? Have we a board, and if so, who are the members? How may any nice, young, deserving

physician get a license to practice in this state? Dr. F. M. Pottenger, in a few pained words of disapproval because the JOURNAL went on record as considering the law idiotic and those who made it—well, let's say, foolish, (September issue, page 386), said: "The profession must be aggressive and emphasize the things for which scientific medicine stands." Does scientific medicine "stand for" the silly mess in which the medical profession now finds itself? Does Dr. Pottenger approve of it? Can he offer any suggestions which will be of service to our attorneys in clearing up the situation? What is the "sentiment of the medical profession of this state"? Does it approve of the acts that have placed a board of medical examiners and a law regulating the practice of our profession, one of the most dignified of all human callings, in this comic opera situation? Is the humiliating condition of things at the present time such as to fill the members of our profession with pride at the intelligent (!) manner in which this mess has been brought about? The JOURNAL most respectfully refers a few of these queries to Dr. Pottenger for his thoughtful consideration.

### LABOR AND "PATENT MEDICINES."

With the statement that it is "From the United Labor Journal, March 1, 1913," comes a reprint of a short article, "Patent Medicines Proven Good." "United Labor" certainly is a traitor to the best interests of the laboring man, for it is just that class—the poor and the very moderately well-to-do laboring class—that make rich the patent medicine manufacturers. What sort of an influence can such a paragraph as the following have upon the not-too-well-able to think laboring man who might better spend his few dollars for more air or food than for an expensive mixture of alcohol and coloring matter and some worthless vegetable stuff of evil taste:

"If the records could be compiled, that is to say, were figures available for such records, it would be shown that patent medicines are the greatest safeguards to the health of the nation, and that they do more to stave off sickness and prevent epidemic than any other element brought out of the chaos of experiments by science."

It is the laboring class of all others that should protect itself from the wastefulness of patent medicines and from the danger of poor and incompetent physicians. The laboring man needs his health and strength in order to make his living; when he cannot work he is not paid and therefore he is the very man who should receive the very best medical advice when he is injured or is ill in order that he may the sooner get back to his earning capacity. It is the laboring class and the poor who make the quacks rich and build palaces for the patent medicine manufacturers; and yet they will not wake up and help stop it and they are led astray by their own publications! One is tempted to believe that our old friend, Mr. Barnum, was at least partly right.

### IS THE CLINICAL CONGRESS AN UNMIXED BLESSING?

Next month there will be held in Chicago another of the huge clinical congresses of surgery and undoubtedly the attendance will be large, not an inconsiderable percentage of those attending coming from the smaller cities and towns. Are these "clinical congresses" altogether an unmixed blessing and wholly desirable? Is there not a considerable element of danger? Many very able and skillful surgeons will perform remarkably delicate operations in a manner and with an ease that are totally deceptive; it looks very easy to do some particular thing when one watches an expert with apparently no effort and with a rapidity that still further adds to the illusion, perform his operation. Will not many a man who lacks ability to handle his fingers, to say nothing of the mechanical brain behind them, go home and try to do that same piece of work that looked so easy when he saw it done by the expert at the "congress"? There is a tremendous gap between the ability of the expert and that of the average man and we must remember that in our work it is not merely some material and time wasted in a failure—it is life or health, and these cannot be lightly considered.

### FRIEDMANN AND THE PRESS.

When the notorious faker, Friedmann, landed in New York with his pet turtle and his press agent and the local medical society did not reach out and grab him to its scientific bosom and pronounce him the greatest man in the world, the newspapers of the country, almost without exception, took occasion to say nasty and disagreeable things about the smallness and narrowmindedness of the medical profession and the jealousy of physicians. There was a deluge of such editorial articles; every medical gentleman who kept silent, criticised or merely said "let us wait and see," was written down as jealous of his great and good rival in the realm of scientific medicine, Friedmann. It was pitiful, but so good was the press-agenting that nothing could be done—the newspapers simply ate up the copy about Friedmann and roasted the physicians of the country in general and in particular. After awhile they awoke to the fact that they had been victimized into printing millions of dollars' worth of advertising—for nothing! The bubble burst and the papers then published editorials condemning Friedmann and his turtle and deplored the whole incident of fooling the people. Such expressions as "The fiasco is pitiful," "confidence not warranted," "thousands of pitiful victims" became quite common. But one thing is peculiar; no single paper, so far as we know, took the trouble to call attention to the fact that they should all apologize to the medical profession they had so recently insulted and abused! No paper, so far as we are aware, published one word of regret for its previous condemnation of physicians who were merely cautious.

### PLAQUE IN SQUIRRELS; AND RABIES.

The *Wisconsin Medical Journal* refers to "The quiet, persistent fight which is being made to protect us all from plague" by fighting the infected ground squirrels here in California. Indeed, so quietly does the work go on and so long is it since anything has been heard of it, that even we here in the state have almost come to forget that it is going on. And truly is it said that it is a fight "to protect us all from plague," for the danger is no more to us here in California than it is to those in the country east of us. During the week ending August 16th, 1913, plague infected squirrels were found as follows: Alameda County, 2; Contra Costa County, 12. Whether the effort to eliminate entirely the ground squirrel, to destroy him and his plague utterly and completely, will ever be successful, it is hard to say. The problem is an enormous one, but the possibility of accomplishment by persistent human endeavor is also enormous; and some progress is being made. In the meantime rabies continues with us and increasingly so; during the week ending August 30th there were reported 1 case of feline rabies in San Francisco, 8 cases of canine rabies in Oakland and 1 case in Alameda. It is also learned that in the past couple of months at least a dozen Pasteur treatments were sold by a single dealer. Yet dogs and cats run at large and one almost never sees a dog with a muzzle on! As a people, we certainly do seem to like to take big chances of getting into trouble.

### THE RISE OF THE OSTEOPATH.

During some of the discussions of laws and things while the legislative session was on, it became necessary to compile the results of the working out of the law of 1907 as applied to the Osteopathic applicants for license; it will be remembered that under that law they had to take the same examination that was given to graduates in medicine. The fact that improvement in instruction in osteopathic schools resulted is quite evident from the figures which here follow:

Results of Examinations, December, 1907-December, 1912 (inclusive).

Date.	Passed.	Failed.
December, 1907.....	0	4
August, 1908.....	0	4
December, 1908.....	1	2
April, 1909.....	4	1
August, 1909.....	10	7
December, 1909.....	8	8
April, 1910.....	13	3
August, 1910.....	22	9
December, 1910.....	15	13
April, 1911.....	8	4
August, 1911.....	23	15
December, 1911.....	16	19
April, 1912.....	9	5
August, 1912.....	24	11
December, 1912.....	20	20
Totals.....	173	125—298

**"THE HEALTH HOSPITAL ASSOCIATION."**

This is a new one in San Francisco and it not only wants to get members who shall pay "Two Dollars (\$2.00) for and as an examination fee \* \* \* and fifty cents membership fee \* \* \* and thirty-five cents per week or \$1.40 per month \* \* \* or \$15.00 for one year, in advance" but this goes some of the others a little better. This Association also wants to sell stock at \$100.00 per share to trusting and confiding physicians! The "member" gets the usual form of contract to give him medical and surgical care and dental care as well, and all that sort of thing, and in the end the "member" gets just what he pays for—medical care at the rate of "thirty-five cents a week." Why will physicians permit themselves to be used by these concerns? It is hard to say; if all physicians would refuse to have anything to do with them, they would cease to exist. But then, if everybody did everything that he should do, we would have no need for legislatures or laws or courts or jails or little trifles like that. It looks like plain old human nature, again! One interesting thing in connection with the "Health Hospital Association" is the type line at the bottom of the application form and also of the contract form. At the bottom, in small type, are, respectively, "Form 14. C. Co., N. Y." and "Form 15. C. Co., N. Y." It looks as though these blanks are a regular stock form gotten up by some New York concern for the use of these many mushroom "Health Associations" that spring up all over the country.

**"CONCERNING COURTESY."**

A little leaflet with that title was issued by the Lackawanna Railroad for distribution to its agents, conductors and representatives who come in contact with the public. Who wrote it is not known, but it certainly ought to be studied by everyone who comes in contact with the public or with any number of people.

"The principle that underlies courteous treatment of others is simply that of doing unto others as you would they should do unto you."

"Words are only one means of expression and *manner* is quite as important; therefore remember that a kindly and gracious manner is not only the sign and mark of a self-respecting man but is to your words what oil is to machinery in making them move effectively to their purpose."

"True courtesy is no respecter of persons. It remembers that 'a man's a man for a that,' and gives the civil word and the helping hand quite as readily to the illclad stranger as to an official of the company."

"Courtesy is not only something the public have a right to expect of you but it *pays*."

What has this to do with medicine? Much, if you just think of it and see the physicians about you who are well-liked and successful in "holding their families"—and those who are not. One sees many a physician who is a failure and a nuisance to himself because he could not understand that "courtesy pays."

**POETIC RECOGNITION.**

In a poem entitled "The Marriage of the Seas," by Stephen Phillips, which appeared in a recent number of a popular magazine, is a verse quite unusual in that it sings the praises of medical science and of sanitation in the work of digging the big canal.

"Nor hast thou played, America, this part  
Alone in conflict, but in healing art,  
Since thou didst gird thyself a foe intense  
To vaporous poison, and to pestilence;  
And to the fatal fly with baleful breath,  
That bears on gaudy wings the buzzing death.  
That air that once was mortal now is pure,  
And Eden rose a garden sweet, secure  
Where Goethals wrought in energy afame,  
Let Gorgas raise an equal plea for fame;  
Who from the pest house and the evil fen  
Conjured a breathing paradise for men."

It certainly is a great pleasure to see that public recognition is being given to the monumental work of scientific medicine at Panama; slowly but surely the people are beginning to learn that the canal has not been dug by steam shovels and by dynamite, but by the quiet work of scientific medicine, the work that turned one of the pest holes of the world into one of its healthiest spots, and, by making it possible for man to live there, made it possible for Goethals to dig his ditch. All the engineers and all the enormous machinery for moving earth and rocks that they could invent and build would never have dug the canal; scientific medicine dug the Panama Canal.

**IF YOU MOVE  
SEND US YOUR  
CHANGE OF AD-  
DRESS AT ONCE.**

## ORIGINAL ARTICLES

## Dermatological Case Reports.\*

By HARRY E. ALDERSON, M. D., San Francisco.

*Circinate Eruption of the Tongue.* This benign condition is described by many writers. The lesions consist of spreading circular or oval areas on the dorsum or sides of the tongue in which there is more or less desquamation. At times the center of an area will appear to become like the normal tongue surface, and occasionally new patches may begin on this surface, thus forming a patch within a patch. Thus two or even three concentric circles may form, the "iris form" (Pusey). The case reported here shows very plainly definite etiological factors which may be of interest:

The patient, Mr. L., a young Swede, rather thin and pale, presented (January, 1911) an irregularly oval lesion of this condition on the right border of his tongue. The lesion was about 50 millimeters long, and 12 millimeters in width at its widest part. It encroached slightly on the dorsal surface of the tongue. Similar lesions had been appearing off and on for about a year, showing a growing tendency to become more pronounced and more persistent. At times the lesions would appear far back on the tongue and at other times towards its tip, always favoring the borders. The patient was subject to much gastro-intestinal trouble, was usually constipated and his tongue was always more or less coated. His sedentary occupation (clerk in an auditing office) and his habit of eating badly chosen and improperly prepared food (such as salt meats, fried foods, pastries and sweets) hurriedly every noon at inferior restaurants, were responsible for his digestive troubles as well as for his generally impaired health. He was of a nervous temperament and worried greatly, thereby aggravating his condition. His tongue condition always grew worse when he had indigestion. At these times he felt greatly depressed and his stools were soft and had a foul odor. The tongue condition was a sort of indicator with him, for when the patches began to appear he always found that he was unable to do efficient work and he lacked reserve force. It was impossible to keep him on a rational diet because he lived at a poor boarding-house and lunched at cheap restaurants of the "hash house" type. Always when he would indulge too much in such things as ham and pastries, his tongue condition would become greatly aggravated. During the Christmas holidays, when he forgot his diet list completely and ate freely of the forbidden foods (in addition to working extra hard at the office), his tongue was in a bad state, and these "benign plaques" were quite angry looking. His habits excepting those mentioned were excellent. He was constantly urged to adhere to the diet carefully outlined for him and various recommended therapeutic measures were tried. He received more benefit from a mixture of nitromuriatic acid, nux vomica, and essence of pepsin than from any other medication. While under this treatment the patches did not recur so often and were less pronounced. At times sulphur given internally seemed to help him. Arsenic had no effect on his condition. Locally sulphur (as recommended by Unna) was tried without success. Tincture of iodine, tincture of myrrh and various astringent mouth washes all failed to do any good locally. In fact, every local measure recommended by the various writers was tried.

The patient was ordered to take more exercise. He joined an athletic club, became actively interested in cross-country walks, which he took every week end, and systematically carried out daily exer-

cises at the gymnasium. After a period of five months of steady systematic work of this kind, his general health was markedly improved; his digestion was perfect, and he gained some weight. His tongue cleared up almost completely. At the present time (April, 1913) the patient has a perfectly normal tongue and it has been so for several months. It is perfectly clear that in this case the recurrent circinate eruption on the tongue was due to chronic disturbances of digestion.

*Arsenical Pigmentation and Keratoses.* The subject of this report, whose photographs are shown herewith (Case 13,632, Stanford University Medical Dept.), is a man 27 years of age. He presents a universally deeply pigmented skin. Scattered thickly through this dark brown skin are many pinhead to pea sized, round, whitish spots, which the patient states represent the original color of his skin. The skin in these spots is of the same texture as that on most of the rest of the body. The pigmentation, which is quite pronounced, is found also in the buccal and the anal mucosa. As would be expected, the areas that are normally dark, are much more so in this case. The skin of the palms and of the soles is excessively thickened, and in both these regions there are numerous prominently raised keratoses. Scattered over the face (and even on the eyelids) and also across the shoulders, there are numbers of small projecting keratoses, some of them almost horn like.



Showing a great thickening of the palms with a few keratoses.

This interesting condition followed the steady taking of arsenic for a long period. The patient originally had psoriasis of over ten years' standing. He began taking arsenic five years ago, on the advice of his physician (in Russia), and has been taking it steadily ever since. The psoriasis completely disappeared, and he has not had a recurrence for over three years. He took the drug in the form of the Asiatic pill. His arsenic intake for the five years was as follows:

First year—3 pills daily (No. 1 formula, each pill containing 0.004 of arsenious acid).

Second and third years—15 pills daily (same formula as before).

Fourth and fifth years—15 pills daily (No. 3 formula, each pill containing 0.001 of arsenious acid).

General examination showed the patient to be in

\* Read before the Forty-third Annual Meeting of the Medical Society, State of California, Oakland, April, 1913.

\* From Skin Clinic, Stanford University Medical Department.

good physical condition. No abnormalities of any of the organs, excepting the skin, were discovered. The blood count was interesting. It showed:

4,350,000 red blood corpuscles;  
78% hemoglobin;  
6400 white blood corpuscles;  
32% polymorphonuclears;  
57% lymphocytes;  
5% large mononuclears;  
5% eosinophiles;  
1% transitionals.

It is much regretted that several blood examinations were not made. The patient went into the country to work before this could be done. He will return to San Francisco this Fall, however, and his blood conditions will be thoroughly investigated.

A thorough neurological examination by Dr. Schaller disclosed no abnormal conditions in the nervous system. Special examinations in the Eye clinic by Dr. McKee, and in the Nose and Throat clinic (Dr. McNaught), revealed no abnormalities in eyes, ears, nose or throat. Slight dryness and redness of the nasal mucosa was noted in the latter clinic.

*Alopecia Areata Caused by Nervous Shock.* Mr. P., age 40, a successful business man of large af-

done so, his prompt recovery possibly would have been attributed to the treatment. Similar experiences are met with occasionally by every physician. It is difficult to properly judge the effects of treatment in a disease which is so variable in its course as alopecia areata.

*Hydroa Vacciniforme or Recurrent Summer Eruption.* F. T., an unmarried man 25 years of age, follows the healthful vocation of a "cow puncher" and general utility man on a ranch in Idaho. He is in perfect health with the exception of his skin affection. This has been present off and on since childhood. When first seen (October, 1911) he presented numerous small, irregularly shaped scars, resembling those seen after severe variola, scattered over the exposed parts, especially the chin, nose, cheeks and hands. Since early childhood he has been having recurrent attacks of a vesicular eruption which soon becomes crusted, and after a variable period this subsides, leaving permanent scars like those seen after smallpox. These attacks are much worse in the Spring, but are always apt to occur when there is an increased amount of sunshine. Exposure to the sun seems to be necessary to provoke an attack, and extremes of temperature have no influence. The patient thinks that the heat of the sun is the most common exciting cause. It is more probable that it is some other quality of the sun's rays that affects him, for at one time for five months while he was running a donkey engine daily, the affected areas were much exposed for long periods to the heat from the fire without producing the least sign of skin trouble. Attacks have appeared during the early Spring when snow was still on the ground and the air was quite crisp with the sun shining brightly every day. These attacks never appear during the periods when there is no sunshine. When he protects his hands by wearing gloves, those parts are not affected by the sunlight. It would be very desirable of course to have him protect his face; but that is out of the question. Either the wearing of a veil or the liberal use of a protecting powder to keep out the actinic rays, would be a dangerous practice for a cowboy. It would invite certain ridicule and probably violence on the part of his associates. It is an interesting fact that during his two visits in California, although he was much exposed to the sun (during the Fall and Winter), his skin was entirely free. Last year he was instructed to use an astringent alcohol lotion and alum freely to toughen his skin for a period of several months before the change of seasons. In the following Spring his attack was much less severe than ever before. However, it is difficult to say what influence the treatment had on his condition. It must be borne in mind that this tendency of the skin to develop these lesions shows an inclination to disappear before the adult age is reached—and this patient is twenty-five years old. His freedom from the eruption while in California, where he was much exposed to sunshine, is interesting. Possibly in the high lands of Idaho there are peculiar atmospheric conditions, in addition to the altitude, which render the effects of the actinic rays of the sun more pronounced.



Showing great thickening of soles with numerous keratoses.

fairs, extremely busy and under constant nervous tension, but in excellent health, was in an automobile wreck. He sustained a broken arm; his wife was severely bruised and suffered a fractured clavicle; and one member of his party was killed. The patient, Mr. P., suddenly had a large patch of alopecia areata come in the occipital region, occupying an area about three inches in diameter—three weeks after the automobile accident. Causes other than shock were fairly definitely excluded—there being no abnormalities in the teeth, no disturbances of the special senses, and the patient's general physical condition being excellent. It is difficult to avoid the conclusion that in this case severe nervous shock was the cause of the alopecia areata. The bald patch cleared up completely in one month. An ointment for local use was prescribed, but the patient never used it. Had he

## THE EFFECT OF COMPETITIVE ATHLETICS ON SCHOLARSHIP.\*

By H. D'ARCY POWER, M. D., San Francisco.

Two years ago the State Medical Society of California appointed a committee to investigate the effects of athletic training in the high schools and universities and made me a member thereof. As my colleagues were devoting themselves to a consideration of ultimate physical effects I thought it might be a useful division of labor if I concentrated on a study of the mental side of the question, this paper is the result and is in fact an expansion of my sub-report, dealing also with some points that are perhaps a little outside of the direct scope of the authorized inquiry and presenting opinions for which I alone am responsible.

That I may the better present the matter I propose an attempt to answer the following questions:

1st. Is the expenditure of public or quasi-public money for higher education authorized or intended for any other purpose than the cultivation of the mind and the acquirements of knowledge?

2nd. Is it necessary or desirable that in order to obtain such intellectual ends physical culture be a part of the curriculum?

3rd. If physical culture be desirable is the method of training a part of the student body in competitive athletics a proper form of such training?

4th. What is the ascertained effect, as seen in scholarship, and life, of competitive athletics in high schools and universities?

It seems scarcely necessary to ask the first question. That the public in paying for high schools and universities, and private munificence in endowing the same makes such expenditures for the sole purpose of affording opportunities for the cultivation of the mind, would appear self-evident. Legislative enactments and endowment: deeds alike plainly state such to be the fact. These institutions neither exist for their own glorification, for the benefit of any group of individuals, directly or indirectly, nor for any material or social benefit to their alumni that is not the direct product of intellectual culture and efficiency. If it is possible for Prof. John J. Stevenson of N. Y. University, after forty years' association with his subject to write, "The average professor in our larger colleges is hardly so important as the football or rowing coach," then surely there is some need to bring home to those responsible for their management that misdirection of public funds is as criminal in one branch of the public service as another. When it is possible for a college to spend nearly as much on advertising and other expenses (\$13,000 against \$17,000) as on the payment of its teachers, the time has surely arrived when we can no longer accept right ideals and action as probable conditions. And just for this reason we must insist, to quote the writer mentioned, that "Real

colleges and universities should come to an honest recognition of the fact that they were founded to produce mental, not physical, athletes; college authorities and they alone are responsible for the common belief that, in college, intellectual work is less important than physical."

The second question, namely, whether physical training is necessary to a realization of the full efficiency of the mind is a question of many sides. The old ideal of a "Mens sana in corpore sano" has its limitations. What is a healthy body in reference to a given mind? Is it necessarily a muscular body? Does biography show any special relation between high physical and mental development? What percentage of the great ones of the earth were muscular or even healthy? I am not ready to offer statistics but I have a strong impression that an appeal to history could give slight support to any close association of intellectual and muscular development to the benefit of the brain. If we turn the question over to physiology and psychology certain interesting questions will present themselves. Here are a few:

What role does the muscular system play, in the life of the organism, and the development of the brain?

It is to be remembered that the muscles contribute more than half the mass of the body. Variations in their conditions or bulk lead to fluctuations in energy production and chemical changes that affect every cell in the organism. We are too much inclined to think of muscles solely as part of the machinery of motion, but it is to be remembered that we are warm blooded animals compelled to metabolise a given quantity of food per day to maintain our temperature and that the muscle is the chief agent in such fuel burning. Ergo, shrunken muscles mean defective heat production and possibly transference of the function to cells that normally are devoted to other purposes involving, in its train, general malnutrition. From this viewpoint a defective musculature must also involve neural elements. But musculature stands in another and even closer relation to the nervous system. Most of the neuronic cells of the cord and a large proportion of those of the brain are directly concerned in inhibiting or controlling muscular movements. Without functional use their nutrition is not maintained and analogy would require us to expect that adjacent areas devoted to sensory or psychic uses, participating in a common blood supply are likely to suffer by reason of their contiguity.

We have excellent clinical evidence to this effect in the experience of the prison at Elmira, N. Y. It is part of the reformatory activities of that excellent institution that the unfortunates committed to its care shall receive instruction during their incarceration, fitting them for useful service in later life. It was found in the case of the undernourished, muscularly defective, slum raised prisoners such efforts were fruitless. They neither had the desire nor the capacity for the simplest instruction; but, after a course of physical training, with the growth of the body appeared the ability

\* Read before the Forty-third Annual Meeting of the Medical Society, State of California, Oakland, April, 1913.

to profit by mental training. So much for the affirmative side of the proposition.

There can be no question as to the desirability of a fairly developed muscular system, kept in reasonable activity, both for its effect on the organism as a whole, and the brain in particular. It is, however, to be observed that in considering the classes with which we are dealing, namely, the students of high schools and universities, cases of muscular deficiency such as those encountered in Elmira are very rare. The disadvantages of excessive musculature are many. To begin with, the musculature constitutes the mass of the body. The very idea of health implies balance. To overdevelop or overexercise any one part of the organism is pathological, as Professor Lee, of Columbia University writing on this subject says, "Physiology teaches that fatigue of one tissue from overuse means fatigue of all tissues. Extreme activity of the muscular system involves not only lessened muscular, but also lessened mental activity." But the overuse of the muscles means more than diversion of energy. It implies cardiac strain with its secondary effects, most important of all it involves flooding of the system with myogenic katabolites, and that these are poisons the fatigue phenomena of muscle tissue amply prove.

There is every reason to believe they are no less deleterious in their action elsewhere and particularly on the sensitive brain cells. Prof. Prouty, of the University of Alabama, in a letter to me, speaking of the effects of athletic training on mentality, says of the students that they show "Inactivity of all mental power, due to clogging of the system." Dr. J. S. Ames, director of the physical laboratory of Johns Hopkins University, on the same subject says the training team "seems to be stupid." The mass of evidence I shall presently offer of scholastic deterioration under athletic training tells the same story of intoxication of the higher centers.

Yet another phase of the question, one of the first importance to educators, is concerned with the existence of mental types and their quite different relationship to physical training. Psychologists divide minds into motor and sensory. Let us see what this means. The nervous system responds to stimuli and mental activity is always dependent thereon. The effects of stimuli are conditioned by the inherited structure and acquired modifications of the mind. A stimulus reaching the sensorium may be dissipated amongst the cells concerned in receiving impressions and ideas, a condition in which the stimulus lingers in the brain, awakening memories, provoking comparisons, and having as its product reflective thought. Or, the stimulus may tend to immediately discharge itself through motor channels. Its result is an action. The first type of mind is called sensory, the second motor. Of course, all minds functionate in both ways; but the tendency to react preeminently in one or the other manner is deeply laid and leads essentially to different types of individuality. Dr. J. Mark Baldwin, of Princeton University, has so excellently sketched the characteristics of the motor type in his "Story of the Mind" that I

cannot do better than quote him. Speaking of such an individual, he says:

"The suggestions which take hold of him translate themselves very directly into action. He tends to act promptly, quickly, unreflectingly. Generally such a person is said to jump at conclusions; he acts in some way on all events and suggestions, even when no course of action is explicitly suggested, and even when one attempts to keep him from action."

Psychologically such a person is dominated by habit. This means that his nervous system acts, either by its hereditary tendencies, or by the undue prominence of certain elements in his education (please note the statement 40 p) quickly in the direction of motor discharge. The great channels of readiest outpouring from the brain into the muscles have become fixed and pervious; it is hard for this process once started in the sense centers, such as those of sight, hearing, etc., to hold in their energies. They tend to unstaple equilibrium in the direction of certain motor combinations, which in their turn, represent certain classes of acts. This is habit; and the person of extreme motor type is always a creature of habit. Speaking of temperament Prof. Baldwin says, "In all his social dealings he is more or less domineering and self-asserting. He seems to be constantly compelled to act so as to show himself off. He has a suggestion to make for every emergency, a line of conduct for each of the company, all marked out or supplied on the spur of the moment by his own quick sense of appropriate action; and for him as for no one else, to hesitate is to be lost." While so ready to act the writer quoted states that "such a scholar is very poor at noting and remembering directions." They possess fluidity of attention. "By fluidity of attention I mean the state of hurry, rush, inadequate inspection, quick transition, all too ready assimilation, out of one ear and in the other habit of mind. His attention is always flowing, always leaping from 'it to that' with supreme agility and restlessness. But the exercise it gains from its movements is its only reward. Its acquisitions are slender in the extreme. It is extremely difficult for a scholar (of this type, H. D. P.), then, to give continuous attention or adequate attention to anything of any complexity. He assumes facts which he does not understand, and goes right on to express himself in action on these assumptions. When such a student has gone through a preparatory school without overcoming this tendency to fluid attention, and comes to college, the instructors in the higher institutions are practically helpless before him. We say of him that he has never learned to study, has no power of assimilation. The embarrassment is the more marked because such a student is willing, ready, evidently receptive, prompt and punctual in his task." I have quoted Prof. Baldwin thus fully, because it leads to the following conclusions:

1st. A large number are born with a natural inclination to motor activity, and a corresponding disability for correct or continued mentation.

2nd. That the condition is an example of in-

herited habit and like all habits becomes intensified by use.

3rd. That habit expresses itself in automatic action, and, just as actions become automatic they exclude the higher mental activities.

4th. The motor type thus judged from the standpoint of potential intellectuality is a lower type representing qualities that were invaluable in primitive society, but of diminishing importance in the world of to-day.

I would, therefore, be inclined to answer question two as follows: reasonable muscular development and activity is necessary to the attainment of a physiologically balanced organism, and muscle training within limits is conducive to brain development. But there is no evidence that the mass of high school or university students are so underdeveloped or lethargic as to call for special provision in this direction. If such were the case it would demand an organization of physical training as an integral part of the curriculum from which none should be exempt.

Question 3. Admitting that physical training is desirable, though not indispensable, is competitive athletics a proper form of such training? The first point to be observed is that competitive teams are recruited from a small part of the student body. Let us ask what part. From the poorly developed who need and would be benefited by exercise or training? We opine not. Such material does not provide the sinews of war. Do they represent the sensory type of mind, with its tendency to excessive introspection, suspended judgment, and slowness to act; whose possessors even when muscular would be benefited by the training of the campus? Again we opine not. The man who takes to competitive athletics as a duck to water is the individual of motor type, whose energies constantly bubble into muscular action, naturally acts on the spur of the moment. He of the fluid attention, who never learns to study. To such men competitive athletics is as easy as mental work is hard. But they not only do not need training along these lines, all such training tends to further fix their unfortunate natural tendencies. The athlete must act, not think, so the greater the perfection of their technic the more automatic the working of their minds. Competitive athletics train the wrong men, physically and mentally. The view here propounded that the man who goes in for exercise is by nature averse to study is not only based on the psychological principles set forth but is supported by the observation of the majority of teachers. In answer to a questionnaire (to be described later) sent by the writer to all the universities of the U. S. and largest high schools of California this view was supported by sixty per cent. of the replies. As Professor Holt of Harvard writes, "the athletes, of course, are not the students. The trouble is that the athletes do not study, but also they are the men who, anyhow, would not study." Prof. M. Herzberg of South Dakota University writes, "on the whole from personal observation I feel that our athletes do not represent our highest class of students," and Pro-

fessor Boggsteller of Harvard doubts whether the men who make poor marks while training would do much better at any time. Both theory and practice compel me to agree with Professor Stevenson of Columbia University, who writes, "Intercollegiate contests of all sorts should be abolished; the great stadia should be abandoned or converted to some useful purpose; courses in gymnasias should be compulsory for all students; athletic fields should be opened for use of all and exercise should be encouraged."

Question 4. We now arrive at what is perhaps the crucial question of this enquiry—What is the effect of competitive athletics on the scholarship of those therein participating? In attempting to answer that question my first idea was to proceed along the same lines as would be followed in an inquiry as to physical results—namely, to apply psychological tests before, during and after training. But difficulties were soon discoverable. It is self-evident that nothing but a large body of data covering many institutions would have any value, and an examination of the literature of the subject showed that such data were not available. As Professor J. Peterson wrote to me later, "There should be made careful tests of general mental ability and of specific powers. The average per cent. of all college graduates not in athletics should be correlated with those of graduates who have been in athletics (the extent of such activity to be figured with) by methods explained by Thorndyke. This means an enormous amount of work which should cover say ten years. Even then this would not show any influence of athletics on mental ability; but only any relation existing between the two, e. g., low or high ability might have a tendency to take to athletics. The study to have much value should be extensive, but it is doubtless worth while." Furthermore, psychological tests unless made by experienced workers are likely to lead to very fallacious results. To test powers of memory (ratiocination, attention or volition), is a very different affair to recording blood pressures, pulse rates or muscle reactions. Even if I could enthrone a sufficient number of university psychologists to undertake the work some years must elapse before I could summarize a report of any value. Under these circumstances it occurred to me that a consensus of opinion of the majority of the men directly concerned in teaching college students must have a value not easily impugned. I realized that the personal equation might disturb results. I found out later that another element was present, of which more later; but taken all in all, I believed that a carefully prepared questionnaire directed to all the universities asking for information based on personal observation, not opinion, should give me the required material. I am glad to find that in thus turning to the results of scholastic experience I am supported by no less an authority than Professor E. B. Hall of the Department of Psychology of Harvard, who in a recent letter to me writes, "Is it not clear that the laboratory for this topic is the athletic field and the class-room? The conditions are there at hand, and the results have only to be read off from the college records.

The administration officers of almost any college have an opinion of some value on athletics and scholarship, and the consensus of such opinions would be the best guide, as I think. It seems to me that laboratories are too highly exalted, and that the matter of athletics and scholarship is one that from its very nature is distinctly not adapted to laboratory examination." I deemed it best to confine my questions to a few definite and easily understandable points, framed in language that the average instructor, not a psychologist, would comprehend. I wished to know whether the stress of training affected scholarship and whether temporarily or permanently, whether athletes were by nature poor scholars, whether morals were improved or lowered, and whether the change referred to change of ideals or alteration in power of restraint. I prepared the following post-card questionnaire.

The Committee on Athletics of the State Medical Society of California will be obliged by an answer to the following questions, based on your personal observation. (Kindly return answer within a week):

1—Have you found students excessively addicted to athletics disinclined to or incapable of intellectual effort?.....

2—Do students that have passed through a period of athletic training show any falling off in the quality of their college work?.....  
For how long?.....

3—If so, what is the effect on  
Memory.....  
Concentration.....  
Reasoning.....  
Will power.....

4—Have you noted any relation between athletics and morals in general?.....  
In ideals?.....  
In restraint?.....

(Signed).....  
Prof. or instructor in.....  
University of.....

and forwarded a number to the president of every important university in the United States and to twenty of the high schools of California, together with a letter in the name of the State Medical Society of California asking the co-operation of the presidents to the extent of placing the questionnaire with the men who would give the most useful and unbiased information, and also inviting correspondence. A very large number of replies resulted and the great universities in particular have afforded valuable data. I now propose to close this paper with an analysis of this material, but before doing so I think it wise to note that a large number of those applied to vouchsafed no replies—and to ask why? Either these gentlemen had no replies to offer, which is not likely to be the case for a whole university, or they considered the State Society of California of too little importance to receive their attention, or for reasons of policy they were unwilling to favor an investigation into the results of athletics on scholarship. As this latter proposition involves the validity of the information that I have received, I propose to consider for a moment the status of athletics in the colleges and the influence it exerts on their policies. A few quotations from prominent educators will give the needed illumination.

Wilbur P. Bowen, Professor Physical Education Michigan State Normal School, *Western Journal of Education*, December, 1908,—after giving an account of the evolution of athletics in American colleges proceeds as follows: "As the attention given to athletics increased, the need of money to

provide the maintenance of the sports increased along with it. The students interested in these sports failing to secure from the funds of the institution any allowance for their maintenance saw that the existence of any such training depended upon their putting on the market a kind and quality of sport that would pay. Working along this line they soon found that financial support depended upon their putting out a winning team. They found that the average individual likes to be on the winning side of everything, and that while people have a moderate desire to see any contest they have an immensely greater in the field or in a man who can beat all competitors. They found that the average community will give liberal support to a team that can win all its games but that it will not give much financial and moral support to a team that does not. As soon as the promoters of athletics clearly grasped this principle they at once set about making athletics pay. The old idea of athletics for health and discipline was discarded; that of athletics for revenue took its place; what had been sport now became business; what had been friendly competition now became war. The team existed for but one purpose, to defeat and humiliate the teams of rival institutions. Only in that way could it swell the gate receipts. The mass of students lacking unusual physical ability merited consideration only in so far as they would aid in the enterprise by paying the admission fee and rooting for the team. With a skill seldom surpassed in the world of finance many a genius of the college world has invented schemes that have been used in every college and high school; professional coaches have been employed, famous athletes from the alumni have been brought back, coaches and alumni have been set at the task of inducing promising athletes to come to the institution, athletes have been enticed, even hired to leave rival institutions and play against their old associates, newspapers have been induced to give large space to the game and to individual players of certain institutions. Players have been given extra inducements in the form of expensive uniforms and equipment for the sport, free board at the training table, long and distant railway trips and an amount of hero worship seldom excelled in the days of chivalry.

The system has worked well for what it was intended. The success of athletics as a commercial venture has been phenomenal. Single games sometimes bring in gate receipts amounting to more than a thousand dollars apiece for all the men on both the competing teams, several of the largest student associations spend more than one hundred thousand dollars annually for the expenses of the game, several have an equipment paid for by earnings and the gift of loyal alumni approaching half a million dollars. The athletics of smaller institutions have also met with a prosperity on a smaller scale."

We here see athletics practiced not for any intellectual gain, but as a successful way of making money by its participants. We shall next see the college authorities making use of this paying and popular side show as a means of obtaining students. Says Professor Stevenson, "Constantly increasing enrollment is for most college presidents

and most trustees, the only proof of success. Canvassing for pupils is as much part of the college plan in some portions of the country as drumming for customers is in a wholesale business house." "They utilize students as wandering minstrels, they have trained bands of student gladiators to contend in intercollegiate contests and they do not discourage the custom of impressing the greater part of the student body as rooters for the team." Again. Professor C. A. Waldo in an article in the *American Physical Educational Review* writing of types of committeemen mentions "The virtuous president or professor who believes that the principal function of athletics from the standpoint of the college is to advertise." And this standpoint is well illustrated by Dr. E. H. Nicholls at Harvard University when in a lecture on competitive athletics he relates how "some years ago, the father of a boy in his last year in a preparatory school came to see me. He stated that the boy was a first-class football player, a pitcher who had never been batted out of the box, and who almost always made a home run in the game. He wanted to know how much Harvard College would give that boy to enter college, and when I said 'nothing' he replied, 'Very well, such and such a college will give me \$800.'" It would be easy to quote more to the same effect. The gist of these statements is that competitive athletics is to the competing students monetary gain; to the non-competing entertainment and reflected glory; to the college authorities the most valued form of advertising. It will now be comprehensible to the State Medical Society of California and others why in many instances their questionnaire was ignored; it was easier to be discourteous than mendacious—for which we ought to be truly thankful.

Bearing in mind the probability that current tendencies must have made for a predisposition to answers favoring competitive athletics, I will proceed to analyze the replies. As already stated 60% of the total replies express a belief that the athlete is naturally disinclined to study. The high school instructors place it as high as 75%. This is to be expected as the non-studious youth would naturally tend to drop out at the end of the high school course. The second inquiry is answered in equal proportion by high school and university professors and is to the effect that 75% of them are of opinion by direct observation that men in training show a falling off in scholarship. Some of my correspondents are explicit on this point. Says Dr. J. S. Ames, Director of the Johns Hopkins University, "There are students who maintain athletic training to a marked degree and who are fairly good students, but the contrary is the rule in a very large majority of the cases." Moreover, "I think the whole influence on the student body of prominent athletics is bad, inasmuch as the interests of the student are taken away from, what seems to me, to be the proper place for them, is withdrawn from the most important part of man's life, and is placed upon something as trivial as a game." Professor B. Newcomer of Drake University writes me: "It is during the training period that they fall off, especially in the quantity of work. Col-

lege athletics demand too severe exertion." Says Professor T. E. McKinney of the University of South Dakota: "They lose from the time the contest begins to the end of the year and show a lack of interest in the particular subject studied by the class." As to the period over which the failure extends, the majority give no opinion. Many refer to the training period, others for a year, and a few believe the damage is permanent.

The third question was designed to ascertain whether the influence affected all or part of the mental faculties, and the terms used were such as every one understands, even though some psychologists might consider them obsolete. The answers are striking—94% state concentration to be weakened or destroyed; 86% note weakening of memory; 83% weakening of will power and 78% of power to reason. Again the high school instructors give a more averse opinion than do the university professorate. Many of the answers are specific. Says Professor J. A. Angel of the Department of Psychology, Chicago University: "These distinctions can not be sharply drawn. General lassitude and lack of interest is a general result." Professor G. S. Smith of South Dakota University observes a "loss of interest that affects all these powers unfavorably." Professor Mortimer Herzberg writes: "Athletics are the cause of more absences from the class than are justifiable." Professor G. H. Sabine of Stanford University sends me some figures showing that at that institution the high grades received by their athletes were in inverse ratio to their success in athletics. Professor T. S. Ames of Johns Hopkins sums the matter up trenchantly in the statement: "My experiences are that in general students who belong to the athletic teams are weak in powers of concentration and in will power. They seem to me to be stupid."

We now arrive at the last question, What is the effect of competitive athletics on morals? The very varying opinions expressed are seemingly due to the different ways in which the question was interpreted. It appeared to me that morals could be affected in two not necessarily connected manners. Ideals of conduct (not confined to the game) and life could be raised or lowered. And the power of restraint in face of temptation could be strengthened or weakened, not merely for the sake of physical fitness during the training period, but as a continued influence during life. My questions were designed to bring out observations on these points. Unfortunately the answers show that in a very large number of cases the respondents considered only the ethics of the game and the training period. We thus find 60% expressing a belief that ideals are improved, but when reasons or details are given they refer solely to fair play in the game. Adverse criticism is, however, explicit. Professor E. N. Keely of the Northwestern University says: "In some cases, by reason of success in athletics, students lose a proper sense of proportion between athletics and study." Professor Geo. E. Putnam of Kansas University writes: "Excessive exercise causes in many cases a kind of specialization that makes a student lose sight of his better ideals, and he degenerates to the level of brutehood." Dr.

David Starr Jordan, President of Stanford University, believes that the effect of athletics on ideals and power of restraint are "better when moderate, ruinous when overdone." Seventy per cent. of the answers are favorable to athletics as increasing power of restraint, but again the result is vitiated by the prevalent underlying thought that because excesses during the training period are sternly interdicted, therefore the men have acquired habitual restraint. Now the history of society shows that periods of artificially enforced restraint are followed by license, and my conversations with those who have lived in close association with athletes, as a class, is that the training over and the game won, indulgence follows abstinence—and all the surroundings of the hero make for such. It is very difficult to conceive how contests conducted in the spirit of war, whose sole object is to defeat and humiliate the opposing teams, and where men frequently act towards their opponents (to quote Professor Bowen) "in a manner that would almost justify homicide," can be the source of improved ideals. As stated, the preponderant opinion as given in the answers to the questionnaires is favorable to athletics as a good moral influence, but the number of replies to this question were smaller than to the others, and I believe largely given under a misunderstanding. Lastly, 40% of all replies were neutral.

This long paper must now be brought to a close. It has involved a great deal of work, and before a complete statement can be rendered will demand very much more. I trust, however, that the evidence advanced and the consensus of opinion based on direct observation of so many men representing the most important educational centers of the country will be a spur to further investigation. So far as the data are at present available, I cannot but agree with Dr. Stevenson that "Intercollegiate contests of all sorts should be abolished," "courses in gymnasias should be compulsory for all students," that "every student should know that the aim in all athletic work is to fit him to do better work in the class room—not, as now, that incidental work in the class room is required to qualify him for membership in a team. Then heroes of a college will no longer be those who have won their "letters" by muscular prowess, but those who have made high rank in study. It will no longer be a disgrace in "halls of learning to be a 'dig,' and one will not be stung by frequent repetition of the assertion that the output of colleges is not that of former days."

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#### SCLERO-CORNEAL TREPHINING FOR GLAUCOMA.\*

By DR. KASPAR FISCHER, San Francisco.

Von Graefe's iridectomy had saved thousands of eyes suffering from acute glaucoma, but had not proved equally efficient in chronic and less in simple glaucoma.

De Wecker introduced the sclerotomy and coined the word Cicatrix à filtration—filtering cicatrix.

La Grange introduced the sclerectomy—that is, the cutting out of a piece of the sclera near the corneo-scleral margin. After the excision of a piece of sclera, iridectomy is usually performed.

On my visit to Germany, last year, I found the La Grange operation the most favored one in the German clinics.

In England, I saw Spencer's sclerectomy and heard of different modifications. At the Birmingham meeting of the British Medical Association I met Colonel Elliott, who in 1909 had published his first paper about sclero-corneal trephining for glaucoma.

The aim of the operation is the creation of a subconjunctival fistula, which will permanently drain the anterior chamber under the conjunctiva and thus prevent the hardening of the eyeball. Col. Elliott tried this operation on a very large material in Madras, India, with excellent results. In describing the operation I cannot do better than use Elliott's own words. (*The Ophthalmoscope*, Aug. 1, 1911.)

**"ANESTHETIC USED.**—It is only necessary to administer a general anesthetic in the case of people who are devoid of all sense of self-control. In the great majority of cases reliance is placed entirely upon the instillation of cocaine solution (4%) reinforced by one, or at the most two, instillations of adrenalin chloride solution (1/1000). If there is much pain and congestion a sub-conjunctival injection is given of 3 or 4 minimis of a mixture of equal parts of the above solutions, and a hypodermic injection of morphin is also administered about twenty minutes before the operation. The latter is also used when there is reason to fear that the patient will be unruly.

**"STEPS OF THE OPERATION.**—(1) Formation of the flap. The patient lies facing a good light.

"A large triangular flap of conjunctiva is dissected up from above the cornea. It runs roughly concentric with the corneal margin, and ends on either side about 4 mm. below the highest point of the cornea and the same distance from the inner and outer side of the limbus. We lay great stress on this detail, for even if the line of incision cicatrices down all round, filtering fluid from the interior of the eye can still find a free exit through the trephine hole into the sub-conjunctival space outside the limits of the incision through the water ways just left. It is most essential that this flap should be dissected right up to the limbal attachment of the conjunctiva; to ensure this, it is reflected on to the cornea and the dissection is proceeded with until the rounded edge of the limbus can be seen overhanging the surrounding scleral tissue. Against

\* Read before the Forty-Third Annual Meeting of the State Society, Oakland, April, 1913.

the dark underlying cornea the appearance of this overhanging edge forcibly suggests a recollection of the corona of the glans penis; if this appearance is seen the surgeon is safe to enter the chamber. But in old, long standing cases it cannot always be obtained, and these are precisely the cases in which there may be a difficulty in entering the chamber on account of adhesions at the irido-corneal angle; we are then in danger of being confronted with a complicated operation and possibly with ultimate failure. It was the experiences of such cases that led us to a further refinement of our procedure, which we have since adopted as a routine measure in all cases; and we now carry our separation of the conjunctiva from the cornea to a farther stage with the aid of the scissor point. As a result of the maneuver, the cornea can be seen to be split; a thin, dark colored crescent, about one millimeter in breadth, surrounds the base of the flap, and defines the area over which the splitting has been effected. Once this appearance is recognized we may be sure of entering the anterior chamber with the trephine; hence the importance of adopting this modification of our technique in every case of trephining. Throughout the whole of the dissection of the flap it is important to keep the points of the scissors directed towards the plane of the posterior pole of the lens; for if one dissects tangentially one is sure to buttonhole the conjunctival flap. It is not necessary to lay bare the limbus throughout the length of our incision. It is sufficient if we do so at the center of the latter over the area adjacent to the spot on which we propose to apply the trephine."

In this last stage I, myself, split the cornea with a small triangular knife, and then lift up the anterior flap with a fine hook and thus clear a space and steady the eyeball for the application of the trepan.

"(2) APPLICATION OF THE TREPHINE.—The spot selected for trephining should be as close to the limbus as possible. If this cardinal rule is disobeyed, two dangers confront the operator: (1) he is much more likely to have an escape of vitreous; and (2) he will probably fail to enter the chamber with his trephine, and will have to burrow his way into it by the aid of a curette or other instrument; in so doing he will probably injure the ciliary body."

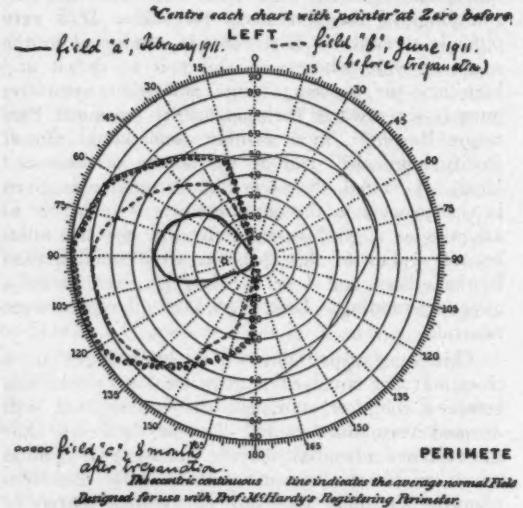
Following Norman's suggestion (*Ophthalmoscope*, January 1, 1912) I tried the trans-illuminator for examination as well as during the operation. It is a distinct help as it illuminates the sclero-corneal margin most distinctly.

"The choice of the size of the trephine lies between  $1\frac{1}{2}$  and 2 mm.

"TREATMENT OF THE IRIS.—It sometimes happens that the iris bulges into the aperture the moment the disc is cut through; if so, it is snipped with the scissors in a radial direction in order to let the aqueous escape; the membrane then often goes back of itself; if it does not do so, then a piece is excised, care being taken to avoid traction of the iris, which will otherwise tend to become impacted in the narrow aperture.

"TOILET OF THE WOUND.—If any tags of iris are seen in the wound, if the pupil has not returned to a central position (thus showing entanglement of the iris in the wound), or if the chamber fills with blood, we use a McKeown's irrigator with very satisfactory results.

"INSTILLATION OF DROPS.—Our rule is to avoid all instillations immediately after operation, unless the pupil shows an obstinate tendency towards upwards displacement, in which case eserine drops (grs. 4 ad. oz. 1) are instilled. On the third day we drop in a solution of atropin (grs. 4 ad. oz. 1), unless the pupil is already widely dilated and active. Our reason for this latter instillation



is that we find in congestive cases a strong tendency to the formation of posterior synechiae; the quiet iritis which leads to this exudation gives no other evidence of its occurrence, and must therefore be constantly guarded against."

Lately this operation has been employed by German oculists.

Stock of Jena, in a recent article (*Klinische Monatsblätter für Augenheilkunde*, October, 1912) gives the following short summary:

"1—Increased tension is the cause of the excavation and the decrease of sight.

"2—This high tension must be removed.

"3—Every primary glaucoma should be operated upon.

"4—Elliott's trepanation is the best operation.

"5—It replaces the simple iridectomy in every case.

"6—Trepanation is easier, less dangerous than the old iridectomy or other operations for glaucoma.

"7—There are some cases in which one should not take the risk of an operation. For example, very old, decrepit people, if the tension can be reduced by myotics.

"8—As the chances for a cure are better the earlier the operation is made, one is justified in recommending an early operation.

"9—The less dangerous the operation is, the more one is justified in recommending it, and I consider Elliott's trepanation the least dangerous."

Colonel Elliott's personality and his paper read before the British Medical Association made such a favorable impression upon me, that I decided to try this operation immediately after my return.

I made trepanation 19 times on 15 eyes of 9 patients.

I will report the history of eight cases in abridged form and present to you one case with more detailed notes.

Case 1, Mr. J. S., J. 2388, age 53 years. Before trepanation: Visus 0.5/60; field small, Tonometer 51. Seven months after trepanation: Vis. 5/6; field normal, Ton. 18.

Case 2, Mr. L. S., J. 884, age 69 years. Before trepanation: Vis. 5/9; field narrowed inward, Ton. 32; two months after trepanation: Vis. 5/9; field unchanged, Ton. 22.

Case 3, Mrs. A. S., J. 14197, age 51 years. Before trepanation: Vis. 5/6; field narrowed inward, Ton. 62. Ten months after trepanation: Vis. 5/6; field normal, Ton. 18.

Case 4, Mrs. L. S., J. 2248, age 69 years. Right eye—Before trepanation: Amaurosis, Ton. 46. Ten days after trepanation: Eye soft. Left eye—Before trepanation: Vis. 5/12; field narrowed downward and outward, Ton. 32. Seven months after trepanation: Vis. <5/9; field slightly narrower than before, Ton. 8. On the right eye a small La Grange operation with basal iridectomy had been made eight months before the trepanation.

Case 5, Mr. L. L., J. 2452, age 45 years. Right eye—Before trepanation: Vis. no movement of hand, Ton. 55. Six weeks after trepanation: Ton. 67, therefore second trepanation. Two months after second trepanation: Ton. 19, no perception of candle light. Left eye—Before trepanation: Vis. finger in 30 cm.; field very small, Ton. 43. Four months after trepanation: Vis. finger in 1 M., Ton. 19, field slightly larger.

Case 6, Mrs. W. R., J. 481, age 66 years. Right eye—Before trepanation: Vis. 4/15; field small, Ton. 23. Five weeks after trepanation: Vis. >4/15; field increased, Ton. 15. Left eye—Before trepanation: Vis. no perception of light, Ton. 33. Five weeks after trepanation: Ton. 21.

Case 7, Mr. C. G., J. 2439, age 58 years. Right eye—Before trepanation: Vis. movement of hand, Ton. 55. Six weeks after trepanation: Ton. 25. Two months after trepanation: Ton. 47, therefore second trepanation. Two weeks after second trepanation: Ton. 35. Six weeks after second trepanation: Ton. 50, therefore third trepanation. Three weeks after third trepanation: Ton. 25. Seven weeks after third trepanation: Ton. with 10: —1. Left eye—Before trepanation: Vis. finger in 40 cm.; field very small <10°, Ton. 30. Six weeks after trepanation: Vis. finger in 40 cm.; no change in field, Ton. 30. Two months after first trepanation: Ton. 37, therefore second trepanation. Three months after second trepanation: Vis. finger in 30 cm.; field increased to 30° temporal, Ton. 27.

Case 8, Mrs. F. K., J. 1070, age 62 years. Iridectomy had been made in both eyes about ten years ago. Senile cataract is developing. Right eye—Before trepanation: Vis. 2/60; field narrowed, Ton. 51. Nine months after trepanation: Vis. 2/30; field increased, Ton. 17. Left eye—Before trepanation: Vis. finger in 50 cm., Ton. 37. Nine months after trepanation: Vis. counting of finger not reliable, Ton. 36.

I now present Case No. 9, Miss M. H., J. 1992, age 26 years. History: A little over three years ago the patient called on an oculist because she could not see well in the distance, but she had no difficulty in her occupation, sewing. Glasses were prescribed. Two years later she went back to the

oculist complaining about pain above eyes, back to the neck and decrease of sight. The doctor spoke about hardening of the eyeballs, but did not give any treatment; he changed the glasses, which did not feel comfortable. A week ago the patient bumped into a telegraph pole which was standing on her left side and which she had not seen; therefore she came to my office February, 1911.

Right eye: Vis. —2 cyl. —0.5 Axis. Hor. <5/6; field considerably contracted, inward to 30°, downward to 23°, outward to 83°. Javal 0.5, Keratometer + 0.25 Vert. Left eye: Vis. 1/30; field very small (see field "a"). Javal 0.75, 15 temp., Keratometer + 0.75 Hor. Pupils in good light, 5 mm.; they react well on light; under eserine contract to 3 mm. Tension of both eyes hard; discs totally excavated. Under myotics both eyes improved but the tension remained high and the excavation unchanged.

June 6, 1911. Right eye: Vis. —2 cyl. 0.5 Ax. Horiz. <5/4; field nearly normal. Left eye: Vis. 0.5/21; field (see field "b").

I made Heine's cyclodialysis with which I combined a sclerectomy, cutting out a triangular piece of sclera, about 3 mm. outside of the sclero-corneal margin. The tension remained lower for some time.

After my return from Europe I found, at repeated examinations during April, 1912, the following:

Right eye. Vis. 5/4; field normal, Tonometer indicated from 50—60. Left eye: Vis. 5/21; field (see field "b"), Tonometer indicated from 33—43.

On May 16, 1912, I made a trepanation on the left eye. This eye has remained soft ever since, below normal; the conjunctiva bulbi shows a slightly chemotic ring around the upper 2/3 of the cornea. Eight months after the trepanation the sight is 5/15; the field has increased (see field "c").

Encouraged by this result I followed Elliott's advice of early operation and made the trepanation on the right eye, October 12, 1912; as the iris protruded into the trepan opening, basal iridectomy was made. The tension has remained sub-normal since and the chemosis of the conjunctiva shows, as in the left eye, that the filtering into it takes place very freely. The field is normal, but the sight is not so satisfactory. It is now four months after the trepanation, with cyl. + 1, Ax. 30 temp. cyl. —2.25 Ax. 60 nasal <5/12. Javal shows 2.5, 60 nasal. Keratometer 3, 30 temp. This astigmatism may be responsible for the poor central vision. The fundus remained unchanged.

In conclusion, I will give the results of my operations in short.

The operation was performed 19 times on 15 eyes. Three eyes were operated upon twice and one eye three times.

The results are the following:

Visus: Better in 6 cases; the same in 3 cases; worse in 3 cases. In three cases amaurosis existed before the trepanation.

Field: Larger in 7 cases; the same in 2 cases; smaller in 1 case. In five cases the field could not be taken.

Tonometer reading: Lower in 14 cases and the same in 1 case.

Supplement.—Since reading my paper I repeated the trepanation on Case No. 7, in which previous operations had failed to reduce the tension permanently; so far the eye has remained soft.

Instead of the hand trepan, I have used the trepan in a dental engine with gratifying success; the operation is quicker and easier; a guard prevents the trepan from entering too deeply.

Regarding the word "trephining" adopted by Dr. Elliott for this operation, I would like to mention that according to Webster's Dictionary (ed. 1910) the correct name seems to be "trepaning" or "trepanation," as the instrument used is a trepan and not a trephine, which latter is defined as a modified form of the trepan distinguished by a center pin.

## USE OF SERA IN MEDICAL HEMORRHAGE.

By F. F. GUNDRUM, M. D., Sacramento.

The term medical hemorrhage is used in this paper to cover a heterogeneous group of cases in which bleeding, not amenable to mechanical manipulation, may occur. These may be roughly summed up into the following groups:

- (1) Hemophilia.
- (2) Hemorrhagic diseases of new-born (of which there are several forms).
- (3) Purpuras (acute-chronic-simple-rheumatic-Werlhof's-Henoch's, etc.).
- (4) Jaundice.
- (5) Grave Anemias.
- (6) Enteric Affections:
  - (a) Typhoid.
  - (b) Dysentery.
- (7) Pulmonary Lesions.
- (8) Nephritis, Malaria, and other severe maladies occasionally.

It is at present impossible to classify these pathologically or physiologically on account of the insufficiency of our knowledge of the causes of this abnormality in the coagulation of the blood. In order better to approach this problem, it is advisable to review briefly the prevailing ideas regarding normal blood coagulation.

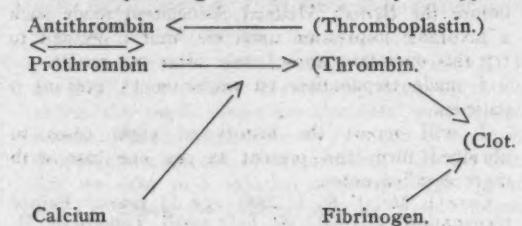
Our interest in this subject was stimulated by the occurrence at the Sacramento County Hospital of several cases in which the tendency towards bleeding was a prominent symptom. On looking over the literature, there seemed a considerable diversity of opinion regarding some of the details of blood coagulation. The recent publications of Howell<sup>1</sup> are followed quite closely in this brief sketch. To begin at the end product and work backward we have:

(1) The clot which is produced by the action of fibrin ferment or (thrombin) upon fibrinogen. Fibrinogen is a definite substance, a globulin-like proteid, which is always present in the amount about 0.5% of normal blood. It forms the main bulk of the clot. It is capable of being isolated (Whipple and Herwitz)<sup>2</sup> and studied. A diminution in the amount of fibrinogen is usually associated with some destructive liver lesion.

(2) Thrombin (whose action upon fibrinogen produces the clot) is not present as such in circulating blood. A mother substance of thrombin (called prothrombin) is normally present but inactive, being bound (in some way, perhaps as the complement is bound in the Wassermann serum reaction) by another substance normally present, namely, anti-thrombin. In order, then, to initiate the clotting process, it is necessary for the prothrombin to be free. This is brought about through the agency of a substance liberated by injured tissue cells, white blood cells, platelets, etc. This substance is called by Howell thromboplastin. The mode of its action being the absorption or fixing of a certain amount of anti-thrombin with a coincident setting free of prothrombin. This latter substance then immediately unites with

soluble calcium salts, which are essential to the reaction to form thrombin, and clotting takes place.

The above described series of reactions can well be shown by a diagram such as used by Whipple.<sup>3</sup>



From this diagram it seems likely that there may be several different causes for failure of coagulation and, although it is still too early in the study of these diseases to speak of an "anti-thrombin-hemophilia" or a "fibrinogen-purpura" it seems certain that some such qualifying terms will be necessary to express the true pathological picture. Two types of theories are advanced to account for uncontrollable bleeding; the first assumes the absence of some one of the normal constituents; the second assumes the presence of some anti-coagulant (anti-thrombin). In an excellent recent paper, Whipple<sup>3</sup> has shown that the fault may be different in different diseases and fall into either of these two groups. He demonstrated the presence of anti-thrombin in a septicemia case with hemorrhage; the absence of prothrombin in a case of melena neonatorum; and the lack of fibrinogen in a patient suffering from cirrhosis of the liver.

When we review the treatment of these difficult patients we are struck by the very considerable number of drugs formerly employed. The list includes ferric-chloride; silver nitrate; hydrastin; gallic acid; ergot; adrenalin; gelatin; etc. Aside from the well-known action of ergot in uterine bleeding and the local styptic action of adrenalin, there is not much to be said in favor of any of these agents.

A logical course of therapy would endeavor to supply the missing ingredients from the equation or neutralize an excess of anti-thrombin present. The analysis necessary to determine the exact abnormality is time consuming and requires a considerable laboratory equipment. For ordinary purposes, then, we are compelled to begin treatment without waiting for the outcome of such analysis. The most available source of supply for substances to form a clot, with the exception of calcium, is blood serum. Calcium has been used extensively in hemorrhage, sometimes with great benefit and sometimes without any apparent improvement. This seems reasonable enough when we consider that it is only one of the several bodies which may be lacking.

Sera, of one sort or another, have been extensively employed with varying effects, usually beneficial.

Weil's work<sup>4</sup> on Hemophilia appeared in 1905. He differentiates this malady into two groups:

- (1) Hereditary form more severe due to presence in the blood of anti-coagulants.

(2). Sporadic less severe due to absence of some normal necessary substance.

He recommends the use of 30 cc. fresh normal serum sub-cutaneously, or 15 cc. fresh normal serum intravenously. Leary<sup>5</sup> published a very interesting series of 20 cases divided as follows: Jaundice, 9; hemorrhage of new-born, 3; hemophilia, 1; purpura, 1; post-operative hemorrhage, 2; uterine hemorrhage, 1; typhoid, 2. Thirty cc. fresh rabbit serum injected at a dose sub-cutaneously gave very good results.

Schockaert<sup>6</sup> used anti-streptococci (horse) serum, 10 cc. at a dose, on several cases with very good results. Many other observers have seen benefits from serum. A few reports have appeared where no benefits were obtained. Schloss and Commisky<sup>7</sup> inject 10 to 30 cc. of whole blood sub-cutaneously. Duke<sup>8</sup> considers the tendency to uncontrollable bleeding, in some cases at least, to be due to diminished number of blood platelets. It is manifest that until more accurate knowledge of the causes, for of these there are in all probability more than one, of this condition has been gained, the treatment must be more or less empirical. At any rate the use of sera, i. e., horse serum, fresh rabbit, guinea pig or human serum, defibrinated human blood, or direct transfusion of blood appears to have yielded better results than any other method to date.

The intravenous introduction of defibrinated blood or foreign serum offers considerable risk on account of possible hemolysins contained; moreover, theoretically at least, the danger from agglutins is equally great. However, in the present state of our knowledge, the risk is not sufficiently great to cause any hesitation in using the method. If Duke's blood platelet theory proves to be a correct one, it does not invalidate the logic of giving defibrinated blood or blood serum, for it is likely that the platelets themselves are not the active agents in the change but some decomposition product of the platelets. It seems probable that the injection of serum or defibrinated blood would answer as well as direct transfusion in all cases except those in which the bleeding was due to a lack of fibrinogen. It is a consideration of great practical importance, for by using injections one is sure that the patient has received a known amount of serum, whereas transfusion even in the most competent hands, often leaves the observer in very considerable doubt as to the amount of blood transferred, if any.

The method of choice at present, then, in the cases of medical hemorrhage would seem to be the exhibition of calcium by mouth with the subcutaneous use of serum or fresh human blood (10 to 20 cc. at a dose). In all cases except those exhibiting a lack of fibrinogen we should expect to see an improvement, for serum introduced tends to combine with an excess of anti-thrombin as well as to supply deficient substances. The patient whose fibrinogen is low and who usually shows signs of hepatic disease may require direct transfusion of blood.

The series which this paper reports consists of

eight cases admitted to the Sacramento County Hospital from September 1910, to June 1913. It has been impossible to make analysis of the patient's blood and the report is only clinical; and therefore, incomplete.

Case 1. J. P. H., male, aet 32; admitted June 19, 1911, complaining of "Rheumatism."

F. H.—Unimportant.

P. H.—Always well and active—no similar previous attacks—no throat trouble.

P. I.—Began 5 days ago—sore throat—fever—3 days ago right knee swollen—2 days ago right elbow and left ankle.

P. Ex.—Well nourished man—tonsils inflamed, several crypts containing pus on each. Streptococcus found in tonsillar smear. Thorax and abdomen negative. Left ankle, right knee and elbow hot, tense, painful. Eight to ten purpuric spots—two to four mm. in diameter on each leg.

June 20th.—Purpuric rash much increased. Ten cc. guinea pig serum subcutaneous.

June 22nd.—No further increase of purpura.

July 16th.—Joints cleared under salicylates and rest; discharged.

Case 2. J. B., aet 10; admitted November 10, 1911, complaining of nose bleed—purple rash.

F. H.—Unimportant.

P. H.—No similar previous attacks—rather delicate child—malaria two weeks ago—took  $\frac{1}{4}$  bottle Grove's Chill Tonic.

P. I.—Began four days ago with nose bleed—four attacks on first day—four on second day—three on third day—3 on day of admission. Rash began on day after—epistaxis started—no joint or abdominal symptoms.

P. Ex.—Poorly nourished; otherwise nothing remarkable noted about internal organs. There is a slow oozing from both nostrils of rather dark blood. Numerous purpuric spots, one to ten mm. in diameter are scattered over the body as follows: One in right lower conjunctival sac—15 or 20 on each arm—eight or 10 on back and abdomen—very thickly scattered over both thighs and legs. Temperature 101. Pulse 100. Respiration 20. Blood examination (Dr. Julien). Red blood cells 3,500,000—white blood cells 8000—hemoglobin 70% test.

#### Differential:

Polymorphonuclears	54%
Large mononeuclears	8%
Small mononeuclears	33%
Transitional	3%
Eosinophils	1%
Mastzellen	1%

Nov. 6th.—5 cc. fresh guinea pig serum.

Nov. 7th.—5 cc. fresh guinea pig serum.

Nov. 10th.—Our supply of guinea pigs becoming considerably depleted we gave 10 cc. of horse serum (anti-streptococcus).

Nov. 12th—No further bleeding.

Case 3. M. L.; admitted December 30, 1911, complaining of spitting up blood.

F. H.—Indian pure blood.

P. H.—Unimportant—source of infection not known.

P. I.—Three weeks' cough.

P. Ex.—Right apical lesion (tuberculosis).

Dec. 31st.—Severe hemorrhage—400 cc.—slow—long continued.

Jan. 1st.—Hemorrhage—250 cc.—slow—10 cc. anti-streptococcus serum.

Jan. 2nd.—Slight hemorrhage—25 cc.—10 cc. anti-streptococcus serum.

Jan. 31st.—No further hemorrhages for four weeks.

Case 4. A. S., aet 14; admitted January 12, 1912, complaining of nose bleed—two days' duration.

F. H.—Unimportant.  
 P. H.—No similar previous attacks—no severe infections, except malaria one month ago.  
 P. I.—Repeated nasal hemorrhage during past three days.  
 P. Ex.—Nasal mucosa red—oozing over both turbinates—not remarkable otherwise.  
 Jan. 13th.—10 cc. horse serum (anti-pneumonic).  
 Jan. 14th.—No change—nares plugged with iodoform gauze.  
 Jan. 15th.—No further hemorrhage.

Case 5. A. M.; admitted April 4, 1912, complaining of nose bleed.  
 F. H.—No known bleeders.  
 P. H.—On several occasions protracted bleeding from slight wounds.  
 P. I.—Epistaxis five days' duration at intervals.  
 P. Ex.—Not remarkable except for rather rapid capillary ooze from right nostril.  
 April 4th.—Nares plugged.  
 April 15th.—10 cc. horse serum (anti-pneumonic).  
 April 6th.—Still some bleeding—10 cc. horse serum.  
 April 10th.—No further hemorrhages.

Case 6. A. K., new born babe. Born at the hospital Aug. 10, 1912. Third day marked jaundice without fever accompanied by purpuric spots and bloody bowel discharges.

F. H.—Negative.  
 Aug. 14th.—5 cc. horse serum subcutaneously.  
 Aug. 15th.—No improvement—5 cc. human blood subcutaneously.  
 Aug. 16th.—10 cc. human blood subcutaneously.  
 No improvement. It was impossible to obtain consent of the father to perform transfusion.  
 Baby died.

Case 7. H. O., aet 14; admitted June 10, 1913; typhoid fever.

F. H.—No bleeders.  
 P. H.—Not remarkable.  
 P. I.—One week's duration, ordinary course.  
 June 24th.—Moderately large intestinal hemorrhages. Hemorrhages at intervals for the following five days in spite of calcium by mouth. Bleeding rather slow. Pulse rose from 80 to 120 during the five days. Ten cc. freshly obtained human blood given subcutaneously. Slight staining of bowel movement three hours later; after which no bleeding. Patient recovered.

Case 8. M. H., aet 30; admitted June 25, 1913; typhoid fever.

F. H.—Not important.  
 P. H.—Not important.  
 During third week of disease 12 hemorrhages averaging about 100 cc. each, during the course of six days. On the sixth day 5 cc. horse serum subcutaneously. No further hemorrhages. Patient recovered.

In six of the eight cases quite definite improvement followed the exhibition of serum or in one instance of fresh human blood. Case No. 4 presented no definite blood dyscrasia and the serum was used merely tentatively. Mechanical means proved quite effective in this case which was not properly an example of a "medical hemorrhage."

Case No. 6 was not benefited by horse serum or fresh human blood and possibly represents an example of lack of fibrinogen. A direct transfusion of blood from the father (had it been obtainable) might have been of benefit.

It seems quite impractical to group together cases of such varied pathology and having but one symptom in common. However, this symptom is frequently so distressing and prompt relief so necessary that any means available for its relief

are gladly used. Whether the results observed in this little group of eight cases which represent our "medical hemorrhage" experience during the past three years, are merely coincidences; or may properly be explained by some of the theoretical considerations mentioned above, I am not prepared to say. I have, however, submitted them for the consideration and criticism of other members of this Society.

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#### TREATMENT OF URINARY TUBERCULOSIS, TUBERCULIN AND NEPHRECTOMY.\*

By DR. LEGUEU and CHEVASSU.

Translated by LEON JOSEPH ROTH, M. D.  
 INTRODUCTION.

Among the problems raised by the therapy of local tuberculoses, there are none so difficult as those concerning the treatment of bacillary infection of the urinary tract. Since the time when it was recognized that urinary tuberculosis is always, or nearly always, of renal origin, surgery was the means of solving the question, by ablation of the pathological kidney in all cases when this suppression was possible. The dogma of precocious nephrectomy in renal tuberculosis, originated by Prof. Albaran of Necker Hospital, Paris, progressively converted the medical world, so that at present this surgical procedure is universally followed. However, there is no doubt that this very radical method of suppression of so useful an organ as a kidney has raised certain objections, in as much as this suppression is directed towards a pathological condition which in other parts of the organism are susceptible of healing without surgical intervention.

It is possible to conceive that a certain reaction has occurred in the medical world, so that now the surgeon has difficulty in deciding to sacrifice a kidney, upon which the tubercle bacilli has produced only discrete lesions, because all hope has not been lost, that such lesions might be cured by a purely medical treatment.

For the past ten years, the advocates of both methods have been prominent in their discussions, and in the accumulation of observations and statistics, and a settlement of this medico-surgical difference of opinion is in imminence of being settled.

Physicians and surgeons have realized their therapeutic conceptions, and have made known the results obtained. They are no longer theoretic. There remains only to judge the facts.

#### RESULTS OF SURGICAL TREATMENT.

Nephrectomy is not a dangerous operation. This can be proven by the accumulated statistics of a

\* Read before the Seventh International Congress of Tuberculosis, Rome, 1912.

large number of surgeons. Of 1539 nephrectomized patients for renal tuberculosis, 92 operative deaths occurred, or 5.9%. These statistics are not all in detail, because many of the patients were not kept under surveillance for long enough time. To study more closely the results of nephrectomy, as much from the point of view of the deaths as of the recoveries, 708 cases will be considered, with results as follows:

557 living	78.7%
151 dead	21.3%

A study of cases in which death occurred.

It is very difficult to separate the "late deaths" from the "operative," consequently all cases dead within the month of operation will be considered as "operative." Of 151 deaths—

43 operative deaths,  
108 late deaths.

(a) Of the 43 operative deaths, the cause of 30 is as follows: Twelve due to insufficiency of the conserved kidney. The remaining 18 are as follows:

Cachexia	3
Hemorrhage	2
Infection	2
Pulmonary T. B.	1
Tetanus	1
Generalized T. B.	2
Intestinal gangrene	2
Cardiac insufficiency	2
Tubercular meningitis	1
Gastric hemorrhage	1
Acute gastric dilatation	1

(c) Of the 108 late deaths, 91 are explained. Seventy-five were due to the following tuberculoses:

Pulmonary T. B.	28
Tubercular meningitis	11
Non specified T. B.	6
T. B. of conserved kidney	17
Generalized T. B.	11
Tubercular peritonitis	2

The other 16 cases are disposed as follows:

Nephritis or uremia	4
Infections	2
Cachexia	9
Salpingitis	1

Of the 108 late deaths, the greatest number were within the first year following operation:

1st year	68
2nd year	9
3rd year	8
4th year	8
5th year	6
6th year	2
7th year	4
8th year	2
9th year	1

It is evident that after the first year the operated runs but little risk.

(b) Study of cases in which recovery occurred:

The 557 survivors, followed after their nephrectomy may be classed as follows:

291 complete recoveries	41.2%
58 non specified recoveries	8.2%
185 incomplete recoveries	26.2%
23 mediocre results	3.2%

1. Mediocre results (23 cases) composed of patients who presented grave pulmonary T. B. (5 cases), or a manifested T. B. of the conserved kidney (9 cases), or those who remained feeble after the operation, without appreciable amelioration: all destined to early decease.

#### 2. Incomplete recovery (185 cases).

These nephrectomized retained their good general condition, but conserved urinary troubles, i. e., frequent and painful mictions, or at least infected urine. The incomplete recovery apparently due to the persistence of vesical tuberculosis.

The future of these incompletely cured patients is difficult to predict. In time many will have amelioration of their vesical troubles. Others will probably develop tuberculosis of the remaining kidney.

#### These cases survived:

Less than one year	23 cases
More than 1 yr. (1 to 12 yrs.)	132 cases
Indefinite	30 cases

The number of these incomplete recoveries diminish with time, a certain number, however, survive seven or eight years and over. One case, ten years after operation still has infected urine, while another presents an abundant albuminuria, in a clear urine.

#### 3. Complete recovery (291).

The complete recoveries are those in which the condition of the urine could be verified. In many of the subjects the clear urine was considered as sufficient proof. But in a large number, inoculations were made, and cystoscopic examinations showed normal bladders. All maintain good general conditions, and a few have a slight frequency of mictions.

The duration of recovery of these cases is as follows:

Less than 1 year	22 cases
More than 1 yr. (1 to 14 yrs.)	269 cases

#### 4. Recoveries (58 cases).

In this special category are arranged a certain number of operated, considered as cured, but nothing is known of the condition of the urine, or the character of the mictions.

#### The duration of their cure follows:

Less than 1 year	in 10 operated
More than 1 year (1 to 12 yrs.)	in 48 operated

Resumé. Definitely, the 708 nephrectomies give 173 bad results. 24.5%  
534 good results. 75.5%

#### The bad results comprise—

43 operated deaths	6.1%
108 late deaths	15.2%
23 survivors in grave condition	3.2%

The good results comprise—

18 incomplete recoveries.....	26.2%
58 recoveries .....	8.2%
291 complete recoveries.....	41.2%

It may be said here, that following nephrectomy for renal tuberculosis, one-quarter of the operated die in from 0 to 10 years following the operation.

One-quarter of the operated are but incompletely cured.

One-half completely cured.

#### RESULTS OF MEDICAL TREATMENT.

All the modes of medical treatment of renal tuberculosis are without doubt far from having great value, and the following statistics include facts that lack conformity; 738 cases are considered, as against the 708 treated surgically.

Of these 738 cases treated radically

456 have died.....	61.9%
282 are living.....	38.2%

A study of the 456 fatal cases.

Considering the date of decease, they are divided thus:

Date not specified.....	124
From 1½ to 20 yrs. (without other detail) .....	48
Exact date known.....	284

Of these 284 cases, death occurred

During the 1st two years.....	144
From 3 to 5 yrs.....	105
From 5 to 10 yrs.....	24
Over 10 yrs.....	9

All of these afflicted, save two, died of renal tuberculosis, or of an intercurrent tubercular complication.

A study of these cases show that many die within two years; a less number survive only five years, and but few live longer, to eventually die of some form of tuberculosis.

A study of 282 living cases.

The duration of life to date is as follows:

From 1 to 5 yrs.....	169
From 5 to 10 yrs.....	40
Over 10 yrs.....	22
Not specified.....	51

The condition of these survivors is considered in 178 cases.

142 retain their renal tuberculosis plus continuous evolution;

36 are to all intents free from infection.

Of these apparently cured cases (36)—

32 are without local manifestations;
2 show urinary infection;
1 shows albuminuria;
1 completely cured.

This last case had been treated by tuberculin.

Among the patients medically treated there are doubtless some for whom a surgical treatment would not have been justifiable, and exact comparison with the nephrectomized is impossible.

If certain renal tuberculoses medically treated are of slow evolution the recoveries obtained by this method are infinitely exceptional. Also are very exceptional, the spontaneous recovery of these cases.

#### RESULTS OF THE TUBERCULIN TREATMENT.

To correctly judge the results of this treatment it is impossible to depend upon general total statistics; many authors publish only those cases that are to them interesting, and acknowledge that they do not report all cases treated by them.

We have united 184 cases, all treated by tuberculin; but the treatments have been mixed, i. e., tuberculin of Koch, Boranek, filtered bouillon of Denys, Marmorek's serum, immunizing bodies of Spengler. Further these patients have been subjected to general anti-tubercular treatment.

These 184 cases are disposed thus:

Dead .....	18
Stationary .....	24
Improved .....	91
Cured .....	51

And from them the following conclusions are drawn:

1. Under the influence of the tuberculin treatment many of the patients are ameliorated; this amelioration is manifested by gain in weight and general improvement. It is likewise manifested by a diminution in the number of mictions and a lessening of the pain; and a clearing of the urine. These modifications may be due to co-existent vesical treatment, also it is not less true that improvement may be noted when there has been no vesical treatment instituted.

2. Many patients remain improved during a greater or less time, and then recommence their symptoms; 16 of the 184 cases were ultimately nephrectomized.

3. An examination of these organs, evidence that they do not differ from the ordinary tubercular kidney. They are cavernous, many giant cells are found upon section; and the pus contains T. B. Only one of these kidneys presented evidence of healing. It contained ancient and recent abscesses, zones of necrosis, and calcifications, and the blood vessels were considerably thickened. It is difficult to affirm that there actually existed a process of healing, because the malady had not lost its virulence and the patient died three months after operation, of miliary tuberculosis.

4. Of the 16 cases nephrectomized after the tuberculin treatment, four died rapidly of generalized tuberculosis; two died of tubercular meningitis after two months; two of general miliary tuberculosis in three months.

This formidable proportion of generalization is frightful. If the tuberculin treatment so frequently provokes such anaphylaxis, it risks of becoming itself a contra indication to surgical intervention.

5. Of the 51 recoveries attributed to the tuberculin many are not convincing.

(a)—In 24 cases actual proof was not presented;

(b)—In 27 cases the patients seemed cured, in the sense that they do not suffer, and their urines are clear, but in 16 of these the cure is of too short duration for affirmation that their condition is else than a temporary amelioration.

(c)—Eleven cases treated by tuberculin, are apparently cured after the lapse of one year; up to

the time of this report the survivors and the time of their cures were as follows:

13 months.....	1
15 months.....	1
18 months.....	2
2 years.....	4
3 years.....	1
4 years.....	1
5 years.....	1

The question still remains, are these cases permanently cured?

#### COMPARATIVE RESULTS OF SURGICAL, MEDICAL AND TUBERCULIN TREATMENT.

Surgical treatment has proven its value—6% of operative mortality. If it does not cure all patients (18% late mortality), it cures at least one-half, and ameliorates one-quarter.

Medical treatment has proven its insufficiency; it retards, perhaps, the evolution of renal tuberculosis but it does not arrest it. The few known examples of cure that are attributed to it are apparently renal exclusions, the dangers of which are certainly more considerable than those of a nephrectomy (persisting dangers of generalization, action upon the opposite kidney, and recurrence in the diseased organ).

The tuberculin treatment has proven its powers of amelioration, but it has too rarely proven its curative effect. It authorizes a hope, always seductive, of cure without operation, and unfortunately but few have been realized. Encouragement might be given in certain cases, if certainty existed that, in case of failure, they would return for operation in a not more serious condition than previously.

The treatment of choice, then, actually is surgical. A general medical treatment should always be coincident.

As for the tuberculin treatment, it will perhaps render services after nephrectomy; before this if urgent, an attempt may be made in young subjects where the diagnosis of renal tuberculosis has been early, and before the advent of pyuria.

#### REPORT ON FOUR CASES OF VARYING TYPES OF ANEMIA.\*

By E. H. CRABTREE, A. B., M. D., San Diego.

To the man of medicine, striving to attain to the greatest efficiency in the diagnosis and treatment of disease, anything that may aid his work is welcomed with ardor. In this age of specialization, it is impossible for the general practitioner to reach the finesse in the use of the various apparatus which are an aid in diagnosis, except by much careful study and application to detail. However, there are many things which the general profession often fails to grasp which should be seized with alacrity, and should be developed to the highest point of efficiency. Among these things, none to my mind is more important than the blood count, with special emphasis on the differential count of the white cells.

To the busy doctor, with an office full of pa-

tients each waiting his turn, it is so easy to make a "spot diagnosis," write out a prescription, collect a fee (sometimes?) and send the patient away with a few words of counsel.

In my short experience, I believe I have found nothing so frequently overlooked as the various anemias, each so typical in itself, and each responding to treatment just in proportion to the therapeutic measures directed at the specific trouble present. When a patient presents himself, complaining of some of the various symptoms dependent on insufficient blood, it is not doing justice to our profession to look at the lips, the conjunctiva, or perhaps the fingernails, order some form of iron to build up the blood, and feel that we have done our full duty. I do not consider it my province, before this body of men, many of whom are vastly my superiors in training and experience, to go into detail about the various causative factors of anemia, nor to attempt to classify the various types; for all this can be read at length in any of the text books and journals; but I am eager to take this opportunity to, in my meagre way, give the facts of four cases that have come under my observation within the past few months. Each of these, wholly different in type, I feel that I have benefited and I know that my practice has been greatly increased by the success that I had in one especially.

Case. I. Mr. K., a man of 43 years, came into my office in November, 1912. He complained of great lassitude, indigestion (?), palpitation of the heart, and some swelling about the ankles. His family history was absolutely negative. His former history was that of having been a strong, healthy man with very little sickness outside of the common children's diseases. His present trouble began in May, 1911, at which time he began to feel lazy. He thought he needed a rest and took a camping trip into the mountains. Here, instead of improving, he gradually grew worse, and began to lose his appetite. He returned home and consulted a physician for the first time. This physician listened to his symptoms, told him his "stomach was out of order" and prescribed a tonic. Not improving greatly, he consulted another doctor, who said it was his kidneys, when he heard about the swollen ankles. Thus he went the rounds, every one finding something different as a basis for his trouble. In December he came to me. He said he'd been to so many doctors, including an osteopath, who found a dislocated vertebra, a Christian Science practitioner who prayed for him, and a chiropractic who pounded him along the spine with a hammer, that he was willing to try most anything. As the man entered I noticed the peculiar waxy appearance, slightly tinged with yellow, with a peculiar flabbiness of the skin. His lips, gums and conjunctiva were bloodless. Physical examination showed very little except a soft blowing systolic murmur in the pulmonary space, not transmitted to the axilla or upward and greatly increased when the patient rose from the table quickly and lay down again. This I assured myself was a purely functional or hemic murmur. I then proposed a blood count and found all I wanted to know. The reds were 1,400,000, the hemoglobin 40% (Talquist). This was enough for a "spot diagnosis," the color index being much greater than one. There was marked poikilocytosis, the cells appearing in all sorts of fantastic shapes and forms with very few typical. Another prominent feature was the anisocytosis, many of the cells being minute microcytes, others nearer the normal size, while there were large numbers of macrocytes. The delta was very irregular. There was much polychromasia, the cells taking the pe-

\* Read at a meeting of San Diego County Society, July 17, 1913.

culiar bluish green color, so characteristic. There were many shadows and degenerates and much pigment. The platelets were increased, the white cells decreased. I searched diligently for nucleated reds and after an hour or so found just one typical normoblast. On the next day in a new smear, I found three megaloblasts and two normoblasts in a very few minutes. Examination of the stomach showed complete achlorhydria.

Differential diagnosis: To my mind there was very little to confound the case with. Of course the achlorhydria and anemia might suggest carcinoma of the stomach but there were none of the very characteristic symptoms. There never had been any pain after eating, the stools were normal color, with no sign of blood, either fresh or of the tarry character. I diagnosed Pernicious Anemia and felt that my therapeutic test fully verified it.

Treatment: I ordered the patient to remain in bed in a screen porch until further directed. He was given acid HCl dilute 20 drops one-half hour after meals and dose repeated in one hour. For the anemia, Fowler's solution in ascending doses beginning with 3 drops T.I.D.p.c. Phenolphthalein was used when the condition of bowels indicated.

Result: Blood smear one week after seeing patient showed many megaloblasts, often three or four in a field. Hemoglobin 50%, red count 2,500,000; the megaloblastic shower continued for more than a week, the reds at this time numbering 3,400,000. I discharged the patient on Christmas eve and he returned to his home in Imperial Valley, the blood at that time showing 80% hemoglobin, 4,100,000 reds, with no nucleated forms.

Prognosis: The patient has kept up the HCl but left off the arsenic (temporarily); he has had no return of symptoms—yet. I expect daily to get a letter telling me of a relapse. The disease is fatal in a short time. I may get another response to treatment next time, but in a very few years I expect him to die.

Case II. Young lady, age 14, Miss C., came in February. Complaint languor, and abnormal appetite, very fond of chewing green grass.

Family history: Mother had been in same condition at her age, otherwise negative.

Previous history: Negative.

Examination showed well developed girl, subcutaneous fat slightly increased, with peculiar yellowish-green tinge to skin, eyes very bright. Examination otherwise negative.

Blood count showed 60% hemoglobin, red cells 4,600,000. Very few abnormalities in the cells, except light color.

Diagnosis: Chlorosis.

Treatment: Rest, daily purge and iron.

Result: Complete recovery.

Prognosis: Recurrence of symptoms with final cure.

Case III. Mr. B., age 32, plumber. Complaint, severe cramps in lower abdomen on left side especially. Patient had passed some grit in his urine and diagnosis of renal colic had been made.

Family history negative.

Personal history, negative till present trouble. Patient stated he had only been in plumbing business two years. Present trouble began three weeks before seeing me. Had been diagnosed as previously stated.

Examination showed rather emaciated man, salient and evidently in great pain. Heart and lungs were negative. Abdomen showed pigmentation all over left side from frequent applications. Tenderness all over abdomen. Some sensory changes in lower extremities and patient stated he stumbled occasionally, more than hitherto. There was a very typical blue line along the gums.

Blood: Reds, 3,100,000; whites, 4,100; Hg. 80%; blood smear showed decrease of polys, many lym-

phocytes and a few nucleated reds. The typical thing to my mind was the basophilic degeneration of Gravitz. The cells appeared bluish, being stippled with those peculiar dark spots first brought to notice by Gravitz and later amplified by Pepper and White.

Diagnosis: Lead poisoning. The blood picture simulated pernicious anemia slightly, but the lead line, sensory changes and colic were typical of plumbism.

Treatment: Magnesium sulphate every other morning. K1, 10 drops, T.I.D.p.c., and tincture of chloride of iron for anemia.

Result: Complete cure.

Prognosis: Patient gave up active work with lead pipes and was promoted to a position of overseer. If he keeps away from lead there will be no return.

Case IV. This to my mind is the most interesting case of all.

Mr. G., age 42, complaint "dropsy" and "general weakness." Former diagnosis "kidney trouble" and "heart trouble."

Family history: Mother died suddenly of "heart failure," otherwise negative.

Previous history: Always well till present trouble.

Present trouble: About a year ago began to notice that his feet were swollen at night so that indentations appeared around the top. Also began to increase in weight. Some time later began to become weaker than usual. Went to doctor who diagnosed "kidney trouble" without any examination of urine. Took some medicine for about a month and gradually grew worse. Went to another doctor who examined urine and finding it negative said he had "heart trouble," gave him a little red pill, probably strychnine, and some bitter tonic. No improvement.

Came to see me first six weeks ago. Examination: Patient had all appearances of a nephritic, swollen eyelids, adenomatous ankles, pasty appearance in general. Chest was of emphysematous type, movement and respiration normal. Heart unusually good, distinct clear sounds following in normal sequence, with no sign of a murmur. Heart slightly increased in size.

Urine examination: Negative.

Blood: Reds 2,100,000; Hg. 35%; whites 3,100. No nucleated forms.

Diagnosis: Here was evidently a marked anemia, evidently secondary in type. I tried in vain to get at a source for the loss of blood. He'd never had any sort of hemorrhage, either from lungs or stomach. I went all over the man's anatomy, and dug up everything I could to find a source for so profound an anemia. I even tried to get a history of bothrioccephalus latus, the cestode, so often responsible for grave anemias in the northern countries of Europe but as the man had never been further from San Diego than Tia Juana this was rather difficult. At last in despair I asked him if he had ever had "piles," and here I found the keynote of it all. He informed me that he had at times felt some pain on defecation, but wasn't sure. Examination showed a mass of internal and external, bleeding hemorrhoids. So marked was the condition that I at first feared carcinoma, and yet this man had suffered so little that he had never thought to tell the doctor about them.

Treatment: I assured him that a thorough operation would make him a strong man again. He went home and began immediately to prepare for the same. The next day the operation was done, and every bleeding point stopped. He was then put on a thorough course of Blaud's and in two weeks his blood was nearly normal and two weeks ago when he came to my office, his edema was all gone, and his blood picture perfect.

## ADDRESS ON THE SOCIAL EVIL.

By CHIEF OF POLICE PETERSEN, Oakland.

It is rather a presumption on my part to address such a learned body as this; it is rather unexpected that one in my position could give you very much information on this question. But I take it that it is the doctors' business to save life—that is what you are for; it is also the policeman's vocation to save life in a smaller sense.

The social evil is agitating not only the people in California, but the whole civilized world, and what to do with this problem is a question of great debate. You are all familiar with the fact that the governor signed a bill a few days ago for the abatement of houses of prostitution. This bill was widely discussed, and was advocated by the so-called reform and religious organizations. I have no fight with the reform or religious organizations, but the question is this: your average reformer speaks of the social evil from an economic or moral standpoint, and it strikes me that the question should be treated from the physiologic standpoint. There has been no time since civilization existed that prostitution did not exist. It first commenced in the early stages of history as a religious ceremonial, and has come down through the ages as a religious ceremonial until the opposition of Christianity was set against it, and in the opposition to prostitution the greatest antagonist are the religious associations. If we could abolish prostitution in the world it would be a great thing, but how, is the problem that concerns us, to be solved? Those of you who are familiar with history will agree with me that no effective law has ever presented itself to diminish prostitution. We have had certain vice commissions that have existed who have presented remedies for this great disease, but when we realize that vice commissions have existed since the 18th century, you realize that we have nothing new. In the 18th century Maria Teresa appointed a vice commission with very extensive powers; they made rules against women appearing in short dresses in cafes, and they confiscated the property of prostitutes and put them in prison. After these rules had been abolished by succeeding rulers of that nation, illegitimacy increased to a greater extent in Vienna than in any other capital of Europe. Wherever prostitution has been suppressed, it has been followed by a tremendous increase in illegitimacy. Our reformers are trying to use exactly the same methods as were employed by Maria Teresa. In England, when such rules were put into operation, the result was to scatter the disease and increase prostitution. It is the same in the United States. To abolish the houses of prostitution causes the scattering of them all over the city and the infesting of the resident districts.

With the conditions that confront us at this time, the question is—what are we to do with prostitution? The abolition of houses of prostitution does not take away the cause; the cause, as you doctors know, is *human desire*. You can sum up the economic conditions, moral and religious, and they do not begin to balance that one great

reason—human desire. You are familiar with the fact that man is a polygamous animal. The chimpanzee and the gorilla, man's biologic next of kin, are monogamous, but man has been and is polygamous. This fact complicates our conditions. You doctors know that the time of man's power to procreate is from 40 to 50 years and that woman has no such length of time. Prostitution exists in our day and age because of the demand for it, and man, more than anything else, is the reason for that demand; it seems to me, therefore, that it is the man's job to meet it. It is more a physiologic proposition than it is a moral or economic proposition. These things complicate it, but the great fundamental is that it is based upon human desire, the greater part man's desire. Our friends the reformers say we should abolish the *houses* of prostitution, and ethically I can agree with them, but how are you going to abolish *prostitution* under present economic conditions? Then there is the question of the superfluous woman. You know that more women are born into the world than men; and with that you have the polygamous tendency of man. We have—in seaport towns like Oakland and San Francisco—a large floating population whose morals are of a low order, who think that the social evil is necessary. You have men from the mills, mines, army and navy, with the desire for sexual intercourse. How are you going to make them continent? If you tell them that they ought to abstain, will it do any good? They have no moral ideas on this subject—no ideas for the time except the satisfaction of their desire.

Do you expect that by the abolishment of houses of prostitution you will prevent these men from satisfying the greatest passion that human nature is heir to? Human nature needs a vent, and so long as the social fabric is as it is, it is futile to expect men to obey the present moral code.

This is one of the greatest problems, and you all know the attending problem of venereal diseases. A great deal more widespread than the white plague is the red plague, but how are we to meet that question? In San Francisco they have a clinic for the treatment of these diseases, and doctors and reformers say it is of little value and a failure because the people who attend it are not properly treated. But should we say that this clinic is a failure if the women who do go there check, even a little, the spread of venereal disease? It is needless for me and for you to say that in this clinic the examinations are made too quickly, for that is so, but the clinic can be made better. If you have a properly segregated district where you can have some control over these women, you can do something for the prevention and cure of these diseases, but if you scatter these women they will go somewhere, and then how are you to handle the situation? It seems to me that these people should be controlled, then this great plague could be checked. But to scatter these people throughout a city is to cover up the sore—not to cure it.

Take, for example, the city of New York. Under the Parkhurst crusade, they drove these women out of their houses into the streets in the middle

of winter, and they scattered all over the city. The result has been the great police graft—the scattering of these houses tends more to graft than any other one thing. In Oakland we have the so-called red light district under regular police control. We do not permit any liquor to be sold there. We believe that there should be a place for these women, and they do not have to pay us for the privilege. In New York, on the other hand, these houses are scattered all over, and the patrolman says to the woman: "You are running a house against the rules of the Police Department; you have got to pay or I will lock you up," and so they levy payment for their privilege. We have in Los Angeles another instance. Los Angeles is not as moral as Oakland and there are conditions there that we would not tolerate. The Chief of Police there is a fine man, and I said to him: "How about your social evil? Have you minimized it?" He replied, "Not at all—we have simply scattered it!" One of our ministers said that he would be glad to have these houses scattered and invade the Piedmont district; he thought it would be the best way to have the prostitute next door to the man who is responsible for her. But you can never control this disease when it is once scattered through a community; but because it is hard, because it is a great problem, there is no reason why every man and woman should not strive for better conditions, and you doctors could stop the advances of prostitution more than anyone else. You do far more than the minister, and upon the doctors of this land will depend the future greatness of the Union. Medicine and surgery, more than any other powers, can stop prostitution, because it is a *physiologic* question. Teaching human kind to change and reform by proper education in our schools and colleges, by getting away from all this false and foolish modesty and teaching young men and women how they are made and what they are made for will do more for the abolishment of the social evil than laws closing houses of prostitution. You cannot make people good by legislative enactment. It is a long job, but it is worth while; and there is no sense in doing things that have been found to be not worth while. When the doctors take hold of the matter intelligently and enthusiastically, we will get somewhere, and when doctors, reformers and theological experts get together, we will be able to solve the problem in America.

#### REPORT OF A CASE OF RABIES IN WHICH A CHILD BIT HER FATHER.

By RALPH E. ALLEN, M. D., and F. L. HORNE, M. D., Newcastle.

Acting upon the suggestion of Dr. Wilbur Sawyer, director of the state hygienic laboratory at Berkeley, Cal., this paper is presented to the medical profession.

While an epidemic of rabies has been known to exist among the dogs of this community, and several people bitten by such rabid dogs have had the Pasteur treatment for rabies administered to them,

the general public has been apathetic to the dangers of the disease to such an extent that dogs have been allowed to go unmuzzled, a child has been bitten and allowed to go untreated until the symptoms of rabies appeared. It is this case to which we draw your attention with the hope that it may stimulate more active efforts on the part of the profession to educate the public as to the dangers of this disease and the means of prevention.

Case. Florence W., age 6 years. Previous to July 2 the health of this child was normal. On above date she was bitten by a strange dog which disappeared and has not been seen since. The bite consisted of one wound located on posterior aspect of the left forearm one inch below the elbow joint. The bite was one-half inch in length and was not intercepted by clothing. Healing of the wound occurred without the development of any infection.

Symptoms of attack: Tuesday, July 22, patient showed anorexia and a general feeling of distress in the abdomen. General malaise evident all day Tuesday, the 22nd.

Wednesday morning general nervous irritability developed. Vomiting set in and continued at hourly intervals throughout the day. Patient evidenced great desire for water which upon drinking caused vomiting.

Saliva drooled from mouth throughout the day. Dilatation of pupils occurred. Patient slept poorly Wednesday night when dyspnoea developed.

Thursday showed extreme restlessness with beginning incoherent speech and movements. Pulse rate Thursday, 8 a. m., 104; temperature, 101°. Temperature, 4 p. m., 104°. At 8 p. m. it had dropped to 102° F. Pulse at 11 p. m., 200.

Marked delirium developed Thursday evening. Patient picked at and tore her finger nails. Expression of terror on face. Constant thirst was present but attempts to drink not only caused vomiting by now, but spasm of the glottis. No edema of glottis was detected. The whole musculature of the throat became spasmodically contracted and the water was forcibly ejected.

Expectoration and vomiting of a dark bloody material occurred at times Thursday evening. Examination of nervous system showed no Koenig sign. Knee jerks were present.

About midnight Thursday patient bit her father at the carpo-metacarpal joint of index finger on left hand. The bite occurred in an already open wound which fact necessitated the father having to undergo the Pasteur treatment. He is now receiving this at Berkeley under the supervision of Dr. Sawyer.

The little girl received two injections of morphine Thursday night, grain one-sixteenth at 10 p. m. and grain one-eighth at midnight.

The first dose had no effect. The second one caused her to lapse into a semi-conscious state. During the last five hours of life, the head was thrown back on the pillow and the chin raised, due to a spastic condition of the muscles of the neck. Death occurred at 5 a. m., Friday.

In the experience of the writers the period of incubation for both human beings and dogs is within a month. This is variable, however, as has been shown by Sawyer and Gundrum at the hygienic laboratory at Berkeley. According to these investigators it may last a year.

### HEMA-URO-CHROME—A NEW LABORATORY TEST FOR CANCER AND SARCOMA; FROM THE URINE.

By THEODORE G. DAVIS, Ph. G., M. D., Los Angeles.

A preliminary report under the above title was published in *The American Journal of Medical Sciences* June, 1913. The number of requests for reprints and details in the application of the test, leads me to prepare this paper, eliminating the comparative tests and adding suggestions and details which queries of correspondents appear to make desirable.

Another incentive is the great interest manifested at the recent Minneapolis meeting of the American Medical Association in regard to cancer.

When reliable statistics show that more than 75,000 persons die annually from cancer in the United States alone; that the death rate has doubled during the past 40 years; while careful clinical and surgical observations and records show that from one-third to one-half or more of these might have been cured by early treatment; certainly there is sufficient reason for presenting a test which will give evidence of a malignant growth before it can be seen, determined by palpation, or by any other method with which I am acquainted. It is well known that any treatment of cancer to be successful must be instituted early in its existence, the earlier the better. This depends upon an early diagnosis. Late treatment cannot be anything but palliative. The beginner should procure the urine from an authentic case of cancer or sarcoma, and acquaint himself with the color reaction, after which errors are less likely to occur.

The urine should be carefully collected, fresh, no preservative should be added; unless when it is impossible to make immediate examination, Hydrochloric acid in the proportion of 1 part to 10 of urine may be added, this being the proportion used in the test. Formaldehyde inhibits the test; and hexamethylin tetramin, formin or urotropin should be avoided where the test is to be applied.

After many experiments extending over considerable time, I determined the following to be the most satisfactory method of procedure. (While the quantity may vary, the proportions should be maintained.) Select a flat bottomed flask of about 180 cc.—or 6 fl. ozs. capacity, with a narrow neck that the ether may be brought up into it, easily seen and separated.

To 100 cc. of urine in the flask add 10 cc. of hydrochloric acid.

Heat over a slow fire until ebullition begins; turn out the fire, and allow it to cool slowly for a time, after which cooling may be hastened by immersion in water. When cold add 30 cc. of ether, cork, tying the cork to prevent evaporation. Turn the flask upside down several times during the six or eight hours required to complete the test. Avoid hard shaking which interferes with separation of the ether. While in cases of pronounced or extensive cancer the ether will acquire a markedly red color in as short a time as twenty minutes, I have found six or eight hours required

for the complete extraction of the Hema-uro-chrome by the ether. By the addition of cold water, the colored ether may be raised into the neck of the flask for observation, and be removed by a pipet into a bottle, corked, sealed and kept for comparison, if desired.

As a certain amount of the ether remains in solution by the contents of the flask, and some is lost by evaporation, I have depended upon the relative depth of color extracted by a certain quantity of ether from a definite amount of urine and hydrochloric acid, by the process described.

It might be possible by adding ether to the contents of the flask to replace that lost, making the quantity removed up to 30 cc. and make colorimetric comparisons, as is done in other color tests; but I doubt if it would be of any great value, for when some of the ethereal solution is allowed to evaporate in a white dish, the red hema-uro-chrome will be seen upon the upper portion, indican, when present, as as indigo-blue ring, slightly lower, while bile-acids and coloring remain in the bottom as a sticky brownish yellow mass. These in varying proportions must of necessity produce different tints; beside which the cleavage of hemoglobin into globulin and the several cleavage products of hematin, of which there may be at least three containing iron, and several not containing iron; indican, bile-acids and coloring, at times fatty substances of the amino-acid group, as well as crystals of ammonium chloride and urate, all of which modify the color of the ethereal solution. While the latter have pathologic significance, this simple test yields us three substances of considerable significance when in excess, viz., indican, bile-acids and coloring, and the hema-uro-chrome. That these represent a pathological physiology, there can be no doubt. The red hema-uro-chrome of cancer is so pronounced, it astonishes the beginner; and occurs even with small growths not otherwise discernable.

Herein lies the great value of this test which enables us to make an early diagnosis, and apply treatment at a time when there is hope of cure.

That this hema-uro-chrome is produced by cleavage of hemoglobin by a product of the cancer cell, probably an enzyme, there is little doubt; but as the chemistry of the uro-chromes is so complicated, and statements concerning them so conflicting, I leave this for future investigation.

I am not aware of the previous application of the uro-chromes in the diagnosis of disease; except Erlich's aldehyde test for insufficiency of the hepatic cells, which should be applied to the urine under examination for cancer. (It is prepared and used as follows: Para-dimethylaminobenzylaldehyde 4; alcohol 16; water to 200. A few drops in 4 cc. of urine, when heated, becomes cherry-red if hepatic insufficiency exists.) This color is quite different from the red hema-uro-chrome of cancer. It aids in the elimination of cirrhosis of the liver, which is one of the confusing disease factors in all sero-diagnostic tests for cancer. Beside this I have found syncytoma, which is practically a malignant condition, and extensive suppurating processes, es-

pecially if tubercular, to give a somewhat red color to the ether, but not to compare with that given by cancer. A pink tint of more or less depth will occur when blood is in the urine from any cause; also in the urine of persons having malaria, "tick-fever" or Babesia, the several infections due to spirillum; "hookworm" and other intestinal parasites, as well as the primary and secondary anemias; but none of these give a color comparable with that from the urine of a cancer patient, and should be readily eliminated.

It is well to remember that all laboratory tests are suggestive or confirmatory and liable to a percentage of errors, yet this test has proven positive in a larger percentage of cases than any other with which I am acquainted; even when the cancer was very small and unsuspected, not determinable by palpation or other diagnostic method. Again a negative finding will enable us to relieve that mental distress associated with a suspicion of cancer or of its recurrence.

#### PHYSICIANS' ASPECT OF SUNDAY CLOSING OF PHARMACIES.\*

By A. S. MUSANTE, Ph. G., M. D., San Francisco.

In this paper I will consider the public's as well as our standpoint as regards the closing of all drug stores on Sunday afternoon, as was recommended by the California Pharmaceutical Association at its last meeting.<sup>1</sup>

My discussion of the subject dates back about one and one-half years ago, and a paper entitled "Sunday Closing of Pharmacies: Physician's Plea to Make It Alternating"<sup>2</sup> was read last year at Del Monte before the above-mentioned organization. The latter, however, as intimated in the opening paragraph, did not take kindly to the suggestions made, probably because they were not considered as being of interest to many. But a month or so after my recommendations were presented to the pharmacists, I was surprised to find in the monthly meeting bulletin of the San Francisco County Medical Society a note to the effect that complaint of the inconvenience that was being caused by the general closing of drug stores on Sunday afternoon had been received at the office of the Society. These protests, which were independent of my agitations, fortified the position I had taken and urged me to bring the matter before the Medical Society of the State of California. I was further stimulated by the endorsement given to my ideas by Dr. Albert Schneider, editor of the *Pacific Pharmacist*, who has championed my attitude in the pharmaceutical press.<sup>3</sup> The latest prescriptionist that I find advocating reform in this matter is J. M. Ricen, whose paper I have only just read,<sup>4</sup> and his conclusions I can sum up best with this quotation, "The practice of Pharmacy, by its nature and relation to the public, precludes absolute Sunday closing, unless some system is devised whereby the public could be served at all times."

My object in working out this matter is that, having been a pharmacist for a number of years immediately preceding my study of medicine, I am

very desirous to bring about the greatest possible co-operation between the pharmaceutical and medical professions and the public, and have already had the pleasure of presenting a paper on "Medico-pharmaceutical Ethics,"<sup>5</sup> which had the object just mentioned in view.

The desirability of pharmacists obtaining adequate rest and freedom from the trying conditions surrounding their calling is admitted; in fact, is always advised and insisted upon by the writer. Therefore, for the sake of brevity, the need of this respite for the members of the profession will not be reviewed. The purpose of this paper is to suggest how the public can be safeguarded from lack of accommodation in emergencies by indiscriminate Sunday closing of drug stores. And I am sure that the best element of legitimate pharmacy will be found more than willing to do all in its power to help the physician conserve the sick from the results that will ensue if imperative and potent remedies cannot be obtained, especially in those cases that occur suddenly and without warning. There is already general evidence of this desire to serve, as is demonstrated by many pharmaceutical establishments in the larger cities that keep open all night and day—except Sunday afternoon! The principal reason given for this "owl" service is that it will be possible to meet urgent demands for prescriptions and other medicinal and surgical articles at any time of the night. But, Sunday afternoon, when all drug stores are closed, is the time when there is a good deal of riding (to the public parks, to and from ferries and depots, etc.), which makes the occurrence of accidents frequent. Of course, the causes that make night opening desirable, like cases of confinements, diphtheria and poisoning, occur also on Sunday afternoon, as they do at all times. Does it not seem, then, inconsistent that the pharmaceutical profession should offer adequate service in the darkest hour of the night, but not on Sunday afternoon?

#### Attempts at Sunday Service.

It will not be amiss to cite a few methods that have been in vogue in different localities to supply what must have been considered necessary service on Sunday afternoon.

San Jose, according to report,<sup>6</sup> had inserted in the agreement for Sunday closing of drug stores an emergency clause, whereby prescriptions and other articles that were absolutely necessary could be supplied at any hour, including, of course, on Sunday afternoon.

R. A. Leet, of Oakland, speaking on this matter,<sup>7</sup> says that in the establishment he is connected with each man takes his turn to attend to the emergency work on Sunday, so that once in eight weeks every man is on duty, his telephone and address being placed on the closed door, so that he can be called for in urgent requirements.

According to page 417 of the *Pacific Pharmacist*, the San Francisco *Call* is authority of the statement that in Los Angeles the retail druggists have divided the city into districts and that those in each section take their turn in keeping open on Sunday, while a notice is posted on the closed doors directing the public to the place that is open.

\* Read before the Forty-third Annual Meeting of the Medical Society, State of California, Oakland, April, 1913.

I was told that the same system prevails in Redwood City.

**Recommendations.**

Now that I have reviewed some of the efforts made to supply the public with adequate emergency service on Sunday and still enable the pharmacists to obtain as much rest as possible, it seems in order to suggest some general plan for adoption, with the hope that if any improvement can be made it will be forthcoming. For large cities, I advise that there be a division into sections of appropriate size, such as would be exemplified in San Francisco by North Beach, Golden Gate Valley, Richmond, Mission, Potrero, Hayes Valley, etc., and that the pharmacists in these areas arrange to keep open on Sunday afternoon and, if advisable, Sunday evening, also, in the order agreed upon, the closed stores directing the people to the establishment that is open. Such co-operation for the safety of the public would elevate the ethical standing of the profession and the general opinion of the regard and function of the pharmacists toward the suffering. Physicians would also appreciate the aid it would be to them as a means of obtaining pharmaceutical articles desired suddenly. It is not noble to treat this matter with a shrug of the shoulder and say it is impossible to get the pharmacists to agree to any improvement upon present methods. The very fact that Sunday closing has succeeded so well in our metropolis is proof that a majority of the prescriptionists stand ready to assist whenever a worthy and unselfish movement is started. What sacrifices are made along the lines indicated work toward the co-operation of medicine and pharmacy in the relief of suffering humanity.

The substitutes for alternating Sunday closing are many, as has already been seen in the references made to them. Personally, I feel that it is better to have all drug stores keep open all day Sunday than to have the safety of the public jeopardized. But if all drug stores are to be closed on Sunday afternoon, the telephone number or address to be used for urgent summons should be left on the closed doors. In large drug stores in districts where no agreement for alternating on Sundays is decided upon, each clerk should take his turn, but a respite on another day should be allowed. I have made no effort to recite the many ways the situation may be met, but have called the attention of the profession to a matter that I think should be given prompt and efficient treatment, so that the highest degree of usefulness to the stricken may be developed. To this end, I wish to conclude by submitting the following resolutions for adoption:<sup>8</sup>

Whereas, There is a tendency on the part of the retail pharmacists, in their desire to obtain needed rest, to close all drug stores on Sunday afternoon, which custom was unqualifiedly endorsed by the California Pharmaceutical Association at its last annual meeting, and

Whereas, There are many emergencies that occur on Sunday afternoon that could be more simply and, often, more safely handled if the drug stores in every small town and in the several sections of

the larger cities arranged to keep one pharmacy open all day Sunday; therefore, be it

Resolved, That the State Medical Society of California, while not opposed to the propaganda of securing adequate rest for the overworked pharmacist, recommends that alternating Sunday closing of drug stores be established where possible, so as to furnish the sick and injured in every locality with the benefits afforded by a drug store; and be it further

Resolved, That a copy of these resolutions be forwarded to the California Pharmaceutical Association with the request that it take similar action and co-operate in every other way possible in this reform.

**References:**

1. Proceedings C. Ph. A., 1912.
2. Proceedings C. Ph. A., 1912, or Pacific Pharmacist, May, 1912, or S. F. and Pacific Druggist, xvi, No. 2.
3. Pacific Pharmacist, July, 1912.
4. Pharmacist, April, 1913.
5. A. S. Musante, Pacific Pharmacist, 1910, iv, 92, or Jour. A. M. A., 1910, iv, 1082, or Practical Druggist, 1910, xxviii, 124.
6. "Sunday Closing," Pacific Pharmacist, iii, 479.
7. Pacific Pharmacist, iv, 112.
8. These resolutions are practically the same as those unanimously adopted by the San Francisco County Medical Society, May 13, 1913.

**ATROPHY OF THE PROSTATE GLAND  
WITH CITATION OF CASES.\***

By HOWARD SOMERS, M. D., San Francisco.

No organ in the human economy, with perhaps the thyroid excepted, is exciting more interest pathologically and surgically than the prostate gland, because in the latter few men of advanced life preserve the normal size and character of this gland. We have studied so attentively the hypertrophied condition that its antithesis—atrophy—has suffered by comparison, and there appears but little literature to recognize, diagnose and treat this condition. Statistics of authors show, however, that the condition has been observed and too without an infrequency. Thompson in his 67 cases, quoted 56 hypertrophied while 11 were atrophied; Messer 35 hypertrophied with 20 atrophied; and Ditiel out of 54 cases, 18 were hypertrophied and 36 atrophied.

In the atrophied condition we find the gland of a white or a grayish white color, hard and resistant, in marked contrast to the normal yellowish, porous, spongy, elastic prostate. The size is smaller than the normal, averaging about 250 grains in weight. The capsule is hard and firm and densely adherent. The sheath and fibrous connective tissue of the perineal outlet in general are more dense and tough, rendering the identification and isolation of the perineal structures more difficult. The surface of the gland is very irregular. The direction of the urethra is distorted, but not much increased in length. Bryan has attempted a classification of the causes of the atrophied condition of the prostate gland, as follows:

1. Inflammatory.
2. Atrophy of wasting diseases.
3. Atrophy caused by pressure.
4. Congenital form.
5. Senile form.

\* Read before the Forty-third Annual Meeting of the Medical Society, State of California, Oakland, April, 1913.

The senile form, which concerns us here, is by far the most common of the atrophied varieties. Thompson says it is the resulting phenomenon of regressive metamorphosis. Senile atrophy like hypertrophy, presents rarely before 50, sometimes before 40. There are instances at 17, 22, 26 and 33. At first the glandular and later the fibromuscular structures become involved. Both sides of the gland are usually affected. Bryan states as etiological factors: (1) pressure of passive congestion, (2) early excessive venery, (3) senile retrogression and arteriosclerosis.

*Symptoms.* In the lighter cases there are very apt to be no symptoms, but in the more severe a distressing and unrelenting condition prevails leading to profound constitutional symptoms. At the beginning of the progressive state the patient will complain of enuresis, diurnal and nocturnal. The individual evacuations of the bladder are less than normal only more often repeated. Later appear a post-urinal leakage and pain in the perineum radiating along the course of the urethra to the glans penis. The cause of the frequency appears to be not a congestion, as in prostatic hypertrophy, but the initial expression, as Grosigli says, of the disappearance of the governing nerve of the prostate and particularly those ganglion cells lying in the periphery of the organ. At the beginning of the disease there is no change in the urine, but later infection comes in spite of the most rigid precautions to the contrary. The residual urine and dribbling are due to gradual increasing atonic weak internal sphincter. The muscle ring loses its tone due to a gradual disappearance of the glandular elements. Then follow impotence, insufficient erections and non-motile spermatozoa due to absence of prostatic secretion. In some cases the semen regurgitates into the bladder, which seems to prove that in normal cases the regurgitation of the semen is not prevented by the congested caput but to the internal sphincter, caused by a defectiveness in its action. An invasion of bacteria from the outer world sets in, resulting in a severe cystitis. The bladder becomes early compensatory. The attacks of acute retention with marked and painful onsets of frequent urination gradually increase in severity. The cystoscope will show a chronic cystitis, a diffuse capillary injection, and a velvety-like appearance of the mucous membrane with scattered yellowish spots of desquamation.

An examination of the prostate per rectum finds the organ small, not painful or sensitive, the surface generally irregular and nodular. The normal active resistance offered to the urethral sound is lacking; it falls readily into the bladder, the urethral length is not increased.

The question now arises: How are the clinical symptoms so definite with the unimportant changes in the sphere of the prostate? A question that has for some time drawn the attention of many authors and has been the object of much spirited discussion, especially so by the French authors. Mercier asserts that the bladder insufficiency exists in atrophy as well as in hypertrophy, but that

there is a distinction in the cause in that by hypertrophy the middle lobe plays the role of a valve, while in those cases without enlargement of the gland—atrophy—we have a cross muscle band which passes behind the lip of the urethral opening of the bladder. This is the celebrated valve of Mercier which in the older text-books took an honored place. In spite of its existence it was held by many authors in dispute. This position was maintained, however, until further studies of senile bladder insufficiency under the French school brought about a complete change of idea, Gunyon maintaining that the underlying cause lay in the bladder whose walls had undergone sclerotic changes secondary to a general sclerotic condition. The degenerate bladder wall being the chief cause of the insufficiency, while the prostatic change was only a secondary cause. At the present time the Gunyon theory belongs to history only for one reason at least if for no other and that is that it is now established that after the abnormal prostate is removed the bladder regains its ability to again normally functionate. Ciechanowski thought that the cause of bladder insufficiency with prostatic atrophy lay in the atrophy of the muscles. It is not yet established by some authors whether in atrophied prostate a condition of mechanical obstruction exists at the bladder mouth. In a far reaching and exhaustive report by Englisch, following a train of clinical and anatomical pathological observations, he attempted to prove that the posterior lip of the inner urethral opening is the natural support, that said muscle, existing in the normal, is changed in the atrophied condition to a fibrous band which arose at times to the dignity of a middle lobe, producing thereby a valve-like aperture which prevented the free out-flow of urine. It is claimed, however, that Englisch had in mind the young individual with the congenital atrophied prostate and not the acquired atrophied gland of the old.

Fuller, Chetwood, Keyes and later Cholzoff maintained that in their experience a chronic contraction of the neck of the bladder, principally found in the young, was the cause of bladder insufficiency without an incorporation of the prostate.

Albarran and others of the French school, in their discussion at the First International Urological Congress in 1908 over urine retention without mechanical obstruction, showed a group of cases in which a change in the bladder existed but failed to make clear why such conditions existed but mentioned that a possible cause was a contraction of the bladder neck brought about by reflex inhibition (vesicle). As to the starting point of the reflex and the method and manner of its contractility of the bladder, nothing definite was elicited. Nevertheless, they cautioned against the removal of a not enlarged prostate because the operation brought about no improvement of the functional ability of the bladder.

These facts standing out as they do, present only a grievous deficiency of a knowledge of the pathologic condition and therapy of bladder insufficiency without prostatic hypertrophy.

**Treatment.** Beyan advocates, in the early stage, a methodical and general insertion of a large urethral sound to combat the weakened sphincter which he claims exercises a very favorable influence, if early instituted, upon the very annoying urinary frequency. Such conditions as posterior urethritis, strictures, vesical and prostatic calculi, tumors and cysts must be treated.

One finds in the literature small notes that some surgeons, as Legner, Dilbet some time after removal of small glands of 10, 15-20 gms. weight have obtained good results. Bartrima, indeed, at the First International Congress of Urology, showed a successful extirpation of an 8 gm. prostate. Shall we, then, as Albaran suggested, do nothing and permit the patient to live a life of intolerable suffering? It would seem, if the conditions are favorable, an operation to remove the obstruction should be done.

The suprapubic, perineal and Bottini are the operations of choice. Bottini's operation is now seldom employed, as it has not fulfilled the hopes anticipated. The results are not permanent, not only when employed in the hypertrophied condition but also in the very slight pathological changes in the bladder.

Gloslik favors the Freyer operation, the suprapubic route, claiming as he does an easy road to the bladder neck and enabling all pathological changes of the inner urethral opening to be seen and removed, but admits the technic is definitely more difficult than in the removal of the hypertrophied gland. He discredits the perineal route and as far as efficiency is concerned puts it in the same class as the Bottini operation. Young of Baltimore claims that just in this atrophied condition is his operation for the removal of the gland most applicable, and his method is the one we have employed with good results.

In our work of 26 cases of bladder insufficiency of the last year, 19 were due to hypertrophy and the balance, 7, due to atrophy. The report of three of the latter will suffice to show the conditions that, in a general way, existed in the entire seven.

Case i, J. H., 72. Complained of frequency of urination, arising on an average of 12 times nightly to pass his water. This condition began about three years previously and has been gradually getting worse until his condition was most distressing. Pain, tenesmus and, as stated, the great frequency of urination.

Examination per rectum revealed a small nodular not oversensitive prostate. The prostate seemed about the size of a hazel nut and approached to some extent a stony hardness. Cystoscopic examination showed a rather small unevenly outlined prostate with no appearance of hypertrophy. A considerable degree of trabeculation extending well over the entire bladder wall. Residual urine 4 oz. After a month of palliative treatment, with no improvement, an operation was performed.

Under spinal anesthesia and following the Young technic for prostatectomy, the gland was removed. Its removal proved long and tedious, due to the hard fibrous nature of the gland. The patient had absolutely no shock. With the retaining catheter in the fistulous opening for drainage, the patient was put to bed with orders for giving internally urotropin and the washing of the bladder every two

or three hours with a warm solution of boric acid. The drain was removed the second day. The patient was up and walking about the third day, and the perineal wound closed on the 17th day. There were absolutely no complications at any time such as hemorrhage or vomiting from nausea.

The patient's condition at the present time he claims is much improved. From arising 12 times nightly, he arises now two to three times, and his residual urine has decreased to about two ounces.

Case ii, J. W., 68. Laborer. Complained of frequent urination—four to five times during the night and every hour during the day. Began to arise at night to pass his water three years previously and this condition has gradually grown worse, until symptoms such as a weak, small stream, pain at beginning and end of urination, urgency and delay in starting the stream. The patient's general condition appeared fairly good. The kidneys not tender or palpable. The urine full of pus and broken down epithelial cells and mucous. No albumen, no sugar, no casts. Bladder capacity eight ounces. Residual urine three ounces. The patient's condition in spite of some six months' palliative treatment, such as washing the bladder and repeated stretchings by hydraulic pressure, passing of sounds, continues about the same. The examination per rectum indicated that both lobes were hard, smooth and hazel nut in size. The cystoscope showed a high degree of trabeculation, numerous and deep trabeculae and diverticulae, deep redness of the bladder mucous membrane and, further, no appearance of hypertrophy at the inner urethral opening.

As stated above, no apparent improvement detected, an operation was suggested which the patient readily agreed to. Identically the same technic as described in above case was carried out. The gland was removed. It weighed not over 10 gms. No bleeding or other complications. Patient up and about in a few days. His fistula closed in 25 days. It is now nearly one year since the operation. Patient says his bladder gives him no trouble and he arises but once at night to pass his urine.

This case is remarkable from the fact that without any apparent mechanical obstruction at the inner urethral opening there should be such a pathological change in the condition of the bladder walls.

Case iii, G. T., 46. Porter. Came complaining of intense burning and frequency of urination of about 12 years' standing. Family history is good. Has always been well and strong until his venereal history began. He has had gonorrhea many times, involving the posterior urethra. Many series of chancroids and patient thinks "some of these must have been chancres."

Twelve years ago the patient began arising at night five and six times and during the day every three-quarters to an hour. This condition had continued all these years in spite of many and varied forms of treatment. He had the characteristic symptoms such as pain, burning and tenesmus on urination, great urgency, a general feeling of ill-being. His general appearance seemed excellent, full, healthy and robust looking. No pain in kidney region—not palpable or sensitive. Urine—no casts, no albumen, but full of pus cells, mucous and epithelial cells.

An examination of prostate showed a prostate hard, nodular, borders sharp and well defined, not particularly sensitive. The cystoscope showed a prostate whose lines were uneven, somewhat simulating the broken teeth of an old saw, a considerable degree of trabeculation and no diverticulae. The trigone was quite heavily injected. The urethral openings normal.

After several months of sounds, bladder washings, dilatations of the bladder and instillation at the neck of the bladder, an operation was advised.

The Young technic followed as above. The

post-operative treatment also as above was carried out. The third day a slight hemorrhage from the wound took place. A thorough washing of the bladder with boric acid solution and a repacking of the wound brought a complete stop to this much troubled condition complained of by various authors.

The patient continued to improve, was up and about on the fourth day. It is now almost one year since the operation, the patient says he feels fine, arises but once at night to pass his water, and only four times during the day. The urgency, pain, tenesmus has left him entirely. His sexual power, so he claims, is fine.

#### Conclusions.

1. The clinical features of bladder insufficiency are very little distinguished between atrophy and hypertrophy.

2. The cause of the bladder disturbance due to atrophy is not clear; some authors believe it is an anatomical change in the bladder wall, an arteriosclerotic degeneration after Guyon; an atrophy of the bladder muscle after Ciechanowski, while others maintain that the cause of the insufficiency rests in the change in the bladder opening whereby the role of a mechanical obstruction is played, a valve at the inner urethral opening after Englisch. Fullers, Chetwood, Keyes, Cholzoff believe the condition is due to a chronic contraction at the neck of the bladder; and finally, such authors as Albarron, Janet and Bazy attribute the cause of the insufficiency to a contraction of the neck arising reflexly.

3. The symptoms of mechanical obstruction due to atrophy cannot be distinguished from those of a mechanical obstruction due to hypertrophy.

4. The anatomical standpoints are, nevertheless, of both conditions atrophy and hypertrophy of the prostate entirely different. The hypertrophied gland is easily enucleated. There is a deviation of the urethra and a baring of the bladder opening which hinders the free outflow of urine. In the atrophied gland the adenomatous condition is wholly wanting. The obstruction to the bladder opening comes probably following atrophy of gland canals when a change in the proportion of the gland tissue and stroma take place.

5. The treatment of the bladder insufficiency due to prostatic atrophy should be a radical removal of the diseased tissue surrounding the inner opening of the bladder. The operation for the removal of the atrophied gland either by the suprapubic or the perineal route is much more difficult than the hypertrophied gland due to the fact that in the former there is no adenomatous tissue and the hold on the surrounding tissue extremely firm.

#### TRAUMATIC HYSTERIA.\*

By JAMES T. FISHER, M. D., Los Angeles.

This paper consists of an analysis of thirty cases of so-called traumatic hysteria, which have come under our personal observation in recent years. Rather than report each case in detail, we will discuss only some of the dominant symptoms, the

majority of which were found in all the cases wherein paralysis occurred. One-third of the series showed no paralysis.

No attempt will be made to enter into a long disquisition relative to hysteria in general except the symptoms which are herein referred to.

As we all know hysteria in major or minor form is relatively common and often masquerades under one heading or another, imitating, as it often does, organic disease. We have often had occasion to change the diagnosis of a sprain, even a broken back, to plain hysteria. We sometimes see an extremity bandaged and splinted which only makes the psychosis worse, and in no small degree intensifies the existing hysteria.

For many years we have felt that the terms traumatic hysteria and traumatic neurosis are incorrect appellations and should be entirely discarded. They do not stand for any disease entity. We all know that a hysteria may follow a traumatism, but even so, it differs in no respect from the same disorder due to other causes.

We do not believe, as has been advocated by Babinski, that the disorder is due to suggestion. The practical question in relation to these cases is, how soon after traumatism did they develop? If immediate, it is almost certain that they existed before, and a thorough study of the antecedents of the individual will often reveal such data. Some of our cases were not typically pure hysteria but were mixed in varying proportions with neurasthenia and one indeed showed a bit of malingering.

Hysteria, traumatic or otherwise, always has certain definite earmarks known as stigmata. We are fully of the opinion, especially in traumatic cases, that no stigmata, no hysteria. With regard to these stigmata without doubt the limitation of the visual field through which the patient sees as through a keyhole, may be regarded as the most important of the different stigmata to which we will allude, and was found in 25 cases in this series. Next, we may regard a lessening or diminution in tactile sensibility on one side of the body, very often the left side, which we speak of as hemi-anesthesia. There is absolutely no possible organic cause for this condition, except in rare cases from lesions in the posterior part of the internal capsule, and if such lesion did exist we would have a very different group of symptoms.

The next most important sign in our experience is a mono-plegia affecting one leg or one arm often on the left side. Over this paralyzed area we invariably found sensory disturbances which were not noticed by the patient until his attention was called to it—which was a loss of sensation over the entire part paralyzed to where the member joined the body. In three of our series this disturbance of sensation was to touch, temperature, and pain. In other cases it was merely a loss of sensation to touch. As we all know, this does not correspond to any definite nervous distribution and was, as is sometimes seen in alcoholic neuritis, a stocking or glove termination. In thirteen of this series the symptom known as globus was quite evident, this meaning that the pharyngeal wall partakes of the same degree of anesthesia which is

\* Read before the Forty-third Annual Meeting of the Medical Society, State of California, Oakland, April, 1913.

evident in other parts of the body, and attempts at deglutition are repeatedly made, and occasion the symptom. Many of these patients spoke of a tight or clutching sensation in the neighborhood of the pharynx.

Aphonia was present in four cases—a condition wherein the speaking voice is entirely lost but the patient is able to whisper. Vise-like contractures occurred in five cases wherein one extremity was paralyzed. Astasia abasia, a curious condition wherein the patient could make all the movements of walking while lying on his back, but when he attempted to stand, all power of his extremities seemed to leave him. The mental examination in the series seems to show a placid exterior with a considerable amount of suppressed or pent-up emotion together with a degree of suspicion which was sufficient to make one consider the development of a psychosis.

A great desire was evident on the part of the patient to be examined or to allow himself to be shown at the clinic so that he could illustrate how badly he was hurt, and a morbid craving for sympathy.

Most of the series were suggestible to an alarming extent and could be thrown into deep hypnosis by an individual unaccustomed to bring about this form of induced sleep. Indeed suggestibility is the underlying characteristic of the hysterical mental state, traumatic or otherwise.

An illustrative case is that of a young man of 29 years with a face which would stamp him as a neurotic. He falls off the car on the 1st day of January. The tumble is a gentle one. He does not promptly get up and is assisted by several who ask him if he is seriously hurt. Of course he does not know, but because his shin hurts a little and because of the excitement incident to the occasion, he yields to the suggestion of the police and others, who rush him to a hospital. He is duly examined by the doctors, nurses, and other attendants. A flaccid paralysis of the lower extremities develops. In addition he has retention of urine for a few days and has no sensations in his legs and thighs to the point corresponding to Poupart's ligament. He is unaware of this sensory trouble. Reflexes normal. He is told that he is seriously ill and promptly somebody suggests to him that he has a good case against the railroad company and can secure a big fee from that corporation. The suit is begun and the many examinations only fix more firmly the idea that he is permanently paralyzed, and will never get well.

The picture which I have drawn is only one of many of which I might speak. The question immediately arises, "Why did the man have the paraplegia? Why do the legs possess no feeling and why does he have a temporary retention of urine?" The most natural thought is that he is suffering from a broken back or from disintegration of the spinal cord. But examination does not show findings corresponding to a lesion in cord.

As a matter of fact this poor neurotic had the material for the trouble when he fell off the car and the fright together with the other suggestions made to him while in this morbid state of mind, produced in his cortex a certain disturbance by

which his memory for motor movements in his lower extremities was buried or otherwise obscured and the entire mechanism disordered. There are many theories to explain the mechanism for this psychosis. The writer feels there is just as much limitation of the field of consciousness as is evident in the limitation of the visual field. Sensations are received and perceived but are not transferred to the domain of personal consciousness. The blind see and the numb feel. Loss of sight is purely psychical. Through some process, the images while really perceived, do not mix in with associated ideas which make up the individual's personality. The conscious mind is only occasionally aware of what is going on in the sub-conscious mind. The conscious mind is oblivious of what its neighbor is doing. By this hysterical symptoms can be explained.

When we recognize, and often we do not, that we are dealing with a disorder purely mental, in which there is no organic change in the nervous structures, any more than one could find in any case of acute insanity, we should not forget that physical measures such as splints, etc., have never cured psychic disorders, except through that peculiar process called suggestion.

Psychic methods are the only methods that can cure psychic disorders. We believe that the patient cannot have hysteria without being congenitally pre-disposed and the physical injury in and of itself has little, if any, to do with the etiology.

Hysteria results from emotional shocks, as is evidenced by the fact that it is also present where the patient merely thinks he is going to be injured. We know of but one case in which the disorder continued for years after adjustment of the lawsuit. The reason recovery takes place so quickly upon adjustment is, that the emotional situation changes. Joy replaces fear, worry, and anxiety and starts the sympathetic system working properly.

The simile which the writer is wont to use is that the patient gets on to the car with his pockets full of powder and that the accident is merely the match which ignites the powder, which powder was in his pockets years before he entered the vehicle.

In closing, the writer wishes to make a plea for a radical change in the treatment of this disorder, and believes, and has indeed proof, that when the patient is in such morbid state of mind this elusive organ should be placed, so to speak, in a splint and kept absolutely at rest. If, after the accident, the patient is quietly isolated, removed from his friends and family, instructed that he must lie perfectly quiet and not converse, supplied with a nurse who can control her own mechanism of speech and under the medical care of a physician who understands the disease, we would hear very little of persisting traumatic hysteria.

Instead of this he always gets sympathy, his complaints are received as though they represent real organic trouble and instead of rigid discipline, he is allowed to follow his sensations and nurse his disease; he becomes a chronic invalid. He is fed on indulgence and morbid suggestion which is the food which fattens the disease.

## THE UNDESCENDED TESTICLE: REPORT OF TWO CASES.\*

By R. L. RIGDON, M. D., San Francisco.

The testicle in its migration from its point of origin in relation to the kidney to its ultimate destination in the scrotum may stop short in the journey at any point along the main traveled highway, or it may wander into inviting bypaths and find lodgment in out of the way places and there take up its permanent abode. In the former case it is spoken of as an undescended testicle and in the latter as a wandering testicle. With the latter variety we are not concerned at this time, but will spend a short time in considering some of the questions arising out of the former variety.

In every male the testicle must undertake this journey and its time schedule is fairly well fixed. In the vast majority it reaches its home in the scrotum by the time birth is accomplished. Sometimes it is a little delayed and does not put in its appearance for a month or two after birth. In this latter case, if examination is made the organ can be felt in the inguinal canal or near the external ring, and its power of migration is so certain that it quickly completes its journey.

Undescended testicles have been classified according to location, as abdominal, inguinal, scrotal; the terms indicating with sufficient clearness their meaning.

Normally the testicle undergoes a progressive development as the growth of the body makes demands upon it, but the development, like the descent, may stop short at any point and it is exceedingly important to remember that the development is decidedly interfered with if it fails to migrate to its natural resting place. In other words, an undescended testicle is an undeveloped testicle. There are those who put it the other way round and state an undeveloped testicle means an undescended testicle, claiming the lack of development is the cause rather than the result of the faulty migration. Be this as it may, the fact remains that a normally and fully developed testicle is never found in retention. Sections have been made at corresponding ages of descended and undescended testicles and the histological study of these sections reveals both a lack of development and a faulty development in the latter. This aberration is most marked at puberty when normally rapid growth takes place, but it is discernable in specimens obtained at a much earlier age. It is claimed that this fault is not due altogether to the unusual traumas that an undescended testicle is subject to, but is inherent in the faulty position. This statement if true should have due consideration in determining when to operate.

The function of the testicle is two-fold:

First, it determines for the male the perpetuation of the species.

Second, it determines for the individual the development of the distinctive male characteristics and exercises a conservative influence upon at least some of these characteristics. The first function

is directly dependent upon the normal and full development of the organ.

If we turn to a text-book upon histology we note that certain changes take place in the epithelial elements of the seminiferous tubes during boyhood and that at puberty these changes are immensely stimulated and the production of normal active spermatozoa results. Just now we found that the normal development of the testicle does not take place if the organ remains undescended—indeed, not only does normal development not proceed in the usual manner, but distinct pathological changes occur. These alterations are most evident at puberty. It is claimed that normal spermatozoa have never been found in an undescended testicle, and while it is probably going too far to assert that normal spermatozoa are *never* present in these organs, still when present they must be exceptional. We are all familiar with the fact that occasionally a cryptorchid will marry and raise a family.

A very important point to keep in mind is the fact that the second or individualistic function of the testicle is not dependent upon its ability to produce the normal male elements. It is undoubtedly true that the general male characteristics of the individual will become fully developed even in the total absence of spermatozoa from the genital apparatus, and this whether the testicle be descended or undescended.

Another point worth remembering is that the masculine determinative function of the testicle very probably does not extend much beyond puberty, but produces its full effects early and then ceases. If the male child is in possession of the testicle up to the time of puberty and is then castrated, the male characteristics of form, voice, mental attitude, etc., will remain. On the other hand, however, it is well known that castration during early childhood will inhibit masculine development. Such an individual has neither the desire nor the ability to copulate. In cryptorchids sexual desire and potency are present, but not the ability to procreate. The absence of the testicles from the scrotum has a decidedly depressing mental effect upon the individual, and such a person is very prone to become sexually neurasthenic.

In some of our text-books and journal articles the advice is given that castration is the operation of choice in adults should it be found that the retained organs can not be easily brought down into the scrotum. This advice does not take account of the above mentioned psychic effect, and to that extent at least is erroneous.

Should it be the desire of any of those present to go into this subject more deeply and in detail the matter will be found very clearly discussed in some of our recent text-books, and especially in a few of the journal articles that have appeared during the past decade. For this reason it does not seem worth while to take up our time further with this résumé.

The points so far brought out that are worth remembering are:

1. A testicle that remains permanently undescended is always an undeveloped testicle.
2. The lack of development appears to be pro-

\* Read before the Forty-third Annual Meeting of the Medical Society, State of California, Oakland, April, 1913.

gressive from early life and becomes most marked at puberty.

3. To this lack of normal development must be added the pathological changes produced by traumatism and inflammation.

4. It is the spermatogenetic function that is affected by the developmental fault.

5. The masculine determinative function is present in spermatogenetically non-developed testes.

6. Double cryptorchids may be potent, but are practically always sterile.

7. The absence of the testes from the scrotum has a marked and unhappy psychic effect upon the individual.

If these points are borne in mind they will help to solve many of the questions that must arise as these patients come for advice and treatment.

With reference to treatment, one broad generalization may be made. If the testes are at all palpable every effort should be resorted to to bring them down to normal position. It is well to remember that quite frequently in new-born babes the organs are not yet fully descended, but that they are very prone to complete their descent if left alone for a few weeks. If by the end of two months they still are not in place, then active efforts should be resorted to in attempts to induce their descent. These efforts will naturally be along the line of manual manipulations. Hernia may be associated with this condition, but the wearing of a truss can not be recommended, as it tends to prevent the further descent of the testicle and also may bring into play a traumatic element.

Manipulation failing operative measures must be considered. When is the best time to operate? Recalling what has been said regarding arrest of development, we will naturally advise an early operation. Most surgeons recommend waiting until from eight years of age up to just before puberty, but if the organ can be replaced at three or four years, it is undoubtedly best for the patient. This gives a better opportunity for full development of the spermatogenetic function, and furthermore it also tends to save the organ from repeated trauma.

Suppose the retention is abdominal and the testes can not be felt, should any operation be attempted? No, for the reason that in all probability it will be impossible to bring them down even after most careful freeing of their attachments.

It may be claimed that under these circumstances they could be ablated and thus avoid the possibility of later malignant changes. If emasculation were done early before puberty, then the development of the secondary male characteristics would be interfered with, which would certainly be objectionable. After puberty the emasculation would not matter so much, for the secondary characteristics already have been established; but at this time of life there could be no valid reason for operating except in the hope of bringing to the patient that peace of mind that can only be obtained if the scrotum contains its normal content. This might be a sufficient reason for attempting orchidopexy in a given case, but its applicability must find a very limited field of usefulness.

It has been my fortune to have seen several cryptorchids, and upon two of them I operated. Both of these were adults. In the first the retention on one side was abdominal and on the other side inguinal, while in the second both organs could be felt within the inguinal canal.

Case 1. Mr. X.—Age 24. Consulted me in 1907. Build rather slight but muscular and in good general health. Much worried because he was not as other men in appearance, and fearful lest impotence should come on and become permanent. He was subject to periods of marked psychic depression, from which he found it very difficult to arouse himself, and his physician also testified to the increasing despondency of the patient.

Examination showed the penis normal. Prostate normal. Scrotum empty. On the left side in the inguinal canal, the small testicle could be palpated. On the right no testicle could be found. Operation of left orchidopexy was advised. The usual operation was performed and after freeing all adhesions it was found that the testicle could be dropped into its bed in the scrotum. It was fixed in this position by a retention suture through the lower pole of the testicle and the suture was then brought out and attached to the thigh by an adhesive strip. The patient made an uneventful recovery. The testicle was small and undeveloped. Several months after the operation the organ had returned to the upper limit of the scrotum and has remained in this position to date. It has not increased in size, but it is in a position in which it can be easily palpated, and this seems to have a reassuring effect upon the patient. For moral reasons this man has never attempted intercourse, but a few months ago he consulted me regarding the advisability of matrimony and I expect sooner or later to have a report upon his sexual potency. He certainly is sterile.

Case 2.—Consulted me November, 1912. Age 26. His genital history was as follows: Neither testicle had ever been in the scrotum. At age of sixteen he had inflammation in both inguinal regions which put him to bed. Later he had severe pain and swelling on the right side. The swelling and pain gradually subsided. On the left side he has had repeated attacks of less severe pain and swelling.

At age of eighteen and for two years thereafter was sexually vigorous, but since that time has had poor erections and has been sexually incompetent.

Upon examination no testicle could be felt upon the left side, either in the scrotum or in the canal. However, the patient stated that when his attacks of pain would be felt upon this side a small tumor would develop near the internal ring, which was very painful, until by manipulation it could be made to disappear within the abdomen, when the pain would pass away. On the right side a small mass could be felt in the inguinal canal.

Operation—The right inguinal canal was operated as in a herniotomy and the testicle was found. It proved to be so far degenerated as to be not worth saving and ablation was performed. The wound was then closed.

The left inguinal canal was then freely opened and the left testicle was found lying in the canal, but it could be easily dislodged into the abdomen, where it undoubtedly made its abode for the greater part of the time. It was freed of its adhesions, the spermatic vessels were cleared well up into the abdomen, and were then found to be sufficiently lax. The vas was then freed well down toward the vesicle. This gave considerable additional mobility but not sufficient to permit the testicle to reach the scrotum. The floor of the inguinal canal was then divided and the vas brought out directly through the external ring. This

maneuver enabled the testicle to lie easily in its scrotal bed. The abdominal wound was firmly closed down to the external ring and the cord was attached to the pillars of the ring in order to prevent retraction. The testicle itself was attached to the scrotal bed but not to the thigh. The recovery after operation was prompt and satisfactory. It is now five months since the operation and I have had the opportunity of seeing this man several times. The testicle has retracted to the upper limit of the scrotum, but seems content to remain in this position. It seems fairly well formed and is movable. The patient has gained weight and is cheerful. His sexual potency has returned in a marked degree and as he has no moral scruples against illicit indulgence he seems determined to make up for lost time in this regard. On several occasions he has brought me the sexual discharge in a condom and two or three times I have massaged his prostate and adnexa and have carefully searched all specimens for spermatozoa, but have never been able to find them.

I wish to mention but one point more. In operating it has been advised and generally practiced, to freely divide the spermatic vessels if they offer resistance to descent. The operation for varicocele teaches us that the vessels can be divided with impunity without sacrificing the organ, but in my judgment in the operation of orchidopexy, and especially if the operation is done early, every effort should be made to preserve all the circulation possible in order that the testicle may have a most abundant blood supply. Thus its normal growth will be fostered and a better developed testicle obtained.

#### INTENSIVE STRYCHNIN TREATMENT OF TRIFACIAL NEURALGIA.\*

By THOS. J. ORBISON, M. D., Los Angeles.

##### INTRODUCTION.

It is a difficult matter to discuss any single type of nerve involvement without confusing the subject with the other types of involvement of that nerve, especially if the discussion involves a symptom complex of a nerve tract of such importance and extent as the fifth cranial or trigeminal nerve, being as it is the most important sensory nerve of the head. The subject of this paper is that one phase of trigeminal disease known as trifacial neuralgia.

The difficulty, therefore, is to avoid mistreating the subject in hand by allowing the whole subject of headaches in general to crowd out one of its smaller divisions.

I shall risk such danger by contrasting here the treatment of a few of the other types of trigeminal pain with that of true neuralgia of the trigeminus.

This is done advisedly and for the purpose of emphasizing two things: (a) that neuralgia of the fifth nerve may be treated along more or less routine lines, or specifically, so to say; whereas, (b) the other types must be treated individually and by methods differing in kind.

This paper contains the clinical records of five cases of trifacial neuralgia (one case being multiple

neuritis plus trifacial neuralgia) in which the treatment consisted of strychnin exhibited in large or massive doses. The happy results and freedom from untoward complications recommend themselves to consideration. All of these cases contain a record of infection. This seems to the author to be the important indication for the exhibition of strychnin.

In contrast to these, and for the purpose of calling attention to the fact that strychnin is not held to be a specific in every painful condition of trifacial distribution, the author desires to cite five cases as examples of other and separate types of trifacial nerve pain in which rational therapeutics seemed to indicate different and differing methods of treatment, and in which the results have been likewise happy.

Of the latter five, one was of hyperemic headache secondary to ovarian dyscrasia and cured by appropriate surgical measures and organo-therapy; the second was a typical indurative headache that was speedily cured by the application of correct massage and moist heat to the indurations, together with internal administration of salophen and the iodides; the third was a combination of migraine with psychasthenia that was cured by the "training camp" method; the fourth, an incipient arteriosclerosis and fatigue neurosis, in which rest, hydrotherapy and thyroid extract were the curative measures; the fifth is a typical migraine associated with an unsuspected syphilis in which salvarsan is being exhibited because the presence of the latter was demonstrated by a positive Wassermann of the spinal fluid. This case is still under observation.

##### Record of Cases of True Trifacial Neuralgia.

Case I. Ref. by Dr. W. A. Edwards. R. G., N. Y. Aet. 52 years. M. Business man. Diagnosis: Supraorbital Neuralgia. F. H. Negative.

P. H. In robust health up to 20 years. Drank too much from twentieth to fortieth year. Grip at twenty-five years (he was sick in bed six weeks and lost forty pounds). After it, he developed psychasthenia and neurasthenia. Malaria at forty years. With this there was a nephritis. Six years ago, a diagnosis by competent physicians was gastritis, colitis and intestinal dyspepsia.

P. I. Seen first 12/16/12. Suffers with intense supra-orbital neuralgia. Morphia, aspirin, veronal and other drugs have no effect upon it.

Treatment: Confined to his room. Strychnin sulphate, gr. 1/30 hourly for four hours, a. m. and p. m., by mouth.

The day following, he was free from the severe pain. On the second day there was no pain. After that, for seven days more, he continued the treatment. Since then there has been no return of the neuralgia.

Case II. H. H. M. Aet. 72 years. M. No occupation. F. H. Negative.

P. H. During the Civil War, he was shot in the leg and developed sepsis. For a long time his life was in danger. He has had malaria and grip. His general health has been rugged. For many years he has had many attacks of intense trifacial neuralgia. These have had no periodicity. Most often the supra-orbital branch of the trifacial supplied the painful zone.

P. I. Seen June, 1912. He was in bed with his head wrapped in hot compresses, and in evident, intense pain. He said he had been suffering for three or four days.

Treatment: Strychnin gr. 1/40 hourly hypodermically for four hours a. m. and p. m. This was

\* Read before the Forty-Third Annual Meeting of the State Society, Oakland, April, 1913.

increased to gr. 1/20 on the third day. By the fourth day he was free from pain and remained so for six months. There was at that time a return of his usual pain. I saw him in this attack and began the strychnin on the seventh day of it. While under the effect of the drug his pain was controlled. It would recur daily, but with less severity. But by the end of ten days it had practically disappeared (more than one branch of the fifth involved). Three months have elapsed since his last attack.

Case III. Miss M. A. Aet. 32. Teacher. F. H. Negative.

P. H. She has been delicate from birth. Pneumonia at three months, followed by bronchial catarrh and dyspepsia, laid the foundation of a delicate childhood. Typhoid fever at eleven years was followed by trophic and sensory nerve disorders—her hair became stiff and fell out; she suffered with pains in the hip joints and sacro-iliac articulations; still later with leg pains.

She has had three attacks that were grip-like in character. Seven years ago she suffered with a skin disease that was associated with alimentary tract distress.

During the last few years she has been, for her, quite well. An interesting condition, in the light of her present complaint, was a tooth impaction (on both sides), with its severe, grinding pain in the left lower jaw for which a correction operation was performed five years ago. Two years ago there was a muco-purulent discharge from the post naso-pharynx.

P. I. She has had no headache in the last five years, until July, 1912, when she began to suffer with a grinding pain in the left upper jaw (similar to the pain of five years ago). This pain was localized in the left zygomatic region, and has always begun there ever since. Thence it will radiate to the eye, ear and lower jaw. It is a dull, heavy, grinding pain rather than a sharp, shooting pain. It has never been present in the daytime, except one day.

There have been three distinct attacks previous to the present: the first in July and August, the second in October and the third in November about a week previous to the present attack. All were associated, as to time, with the menstrual period (except the present). The first lasted ten days, the second eight days, and the third four days. The present attack began last night (November 22nd, 1912).

Treatment in this case promised to be unsatisfactory, because it was not expedient for this young woman to give up her school duties completely. But, because of her hearty co-operation, we were enabled to obtain excellent results in a reasonable time. She went directly home from school and to bed. She then took strychnin, gr. 1/40, hourly, by mouth, while awake. On Saturdays and Sundays and holidays this treatment was continued.

The result has been more satisfactory than was anticipated. The trifacial pain was at first controlled and then entirely disappeared.

Case IV. 5/2/12. Ref. by Dr. Soiland, of Los Angeles. E. E. B. Aet. 52 years. S. Solicitor. Diagnosis: Tic Douloureux. F. H. Negative.

P. H. Has always been in robust health, except that he was treated so vigorously for a suspected syphilis that he developed mercurial poisoning. This happened in 1886.

P. I. Five years ago he had a painful spasm of the left side of his face. Electrical treatment, he said, relieved it. Three years ago there was a return of pain with spasm of the facial muscles on the left side. The pain was confined to the inferior maxillary distribution and has remained so. Ten months ago the pain again returned and has continued more or less constantly. Examination shows it to be a typical tic dououreux. During the pain,

if any attempt is made to open the jaws the pain is excruciating.

The teeth have been examined for any possible etiology. The exhibition of morphin hypodermically gives no relief. Treatment by the alcohol injection method seemed to be indicated. A preliminary course of rest in bed, oil ricine ½ a. m. and p. m., with strychnin sulphate, hypodermically, was instituted. Strychnin was exhibited in gr. 1/40, hourly doses, at first, for four hours in the morning and again a course of four hours in the afternoon. The dosage was rapidly increased until he was getting gr. 1/10 hourly, day and night, hypodermically. This was continued for ten days without untoward symptoms. Only once was the dose diminished for a few hours, because of slight muscular twitching.

The remarkable feature about this case was the unmistakable control of the pains in the face. But, inasmuch as it did not entirely arrest it, the injection of alcohol was made at a formal operation performed by Dr. A. S. Lobingier. The mandibular branch of the fifth cranial nerve was exposed by a window cut out of the lower jaw and injected with 70% alcohol, minims twenty. The seventh nerve was exposed at the same time and likewise injected. The results were instant arrest of the pain and facial spasm, with a temporary facial paresis. The latter cleared up completely and the pain did not return for nearly six months, and then only as an occasional symptom. At the present time, more than a year since the operation, he is having no pain or spasm.

Case V. Ref. by Dr. F. M. Pottenger. Mr. A. R. M. Aet. 61 years. M. Diagnosis: Polyneuritis, with trifacial neuralgia. F. H. No hereditary taint. Was married at 21 years. Patient has had nine children; two were still-born.

P. H. He denies venereal disease. At forty years of age he had typhoid and malaria. Since then he has never been as well as before.

P. I. For the last fifteen years, or longer, he has complained of pain in all parts of the body and head. It began in the little toe of the left foot. Then the upper leg on the same side. Later the other toe and leg were involved.

About this time, he had subjective girdle sensations. Still later the lumbar region, thorax and head have been implicated. At first, he had the so-called "feet foot" symptoms. There have never been gastric crises. There have at times been temporary blurred vision and some faintness.

The diagnosis of tabes was made by a number of prominent neurologists and internists in Chicago some years ago.

P. E. Examination of the blood and spinal fluid showed a strongly negative Wassermann (Brem & Zeiler).

Examination of the eyes showed normal fundi with reaction to light and in accommodation (no Argyle-Robertson pupils) (Dr. Mansur).

Reflexes. K. J. absent; B. J. present; no Babinski; station intact. Blood pressure 170 M. M. No objective disturbance of sensation.

Urine: Normal except for increase of indican. There is evident intestinal stasis.

Treatment: He was put to bed and his bowels kept active. Strychnin sulphate, gr. 1/40 hourly, for four hours, a. m. and p. m. exhibited. This was increased to gr. 1/20 and gr. 1/15 alternately. Quinine, gr. v, hourly, for three hours, was given by mouth at six, seven and eight o'clock p. m.

Previous to beginning this course, he had been taking morphine, gr. ¼ every day or two for some time. Since beginning it, he has had only three hypodermics of morphine, gr. 3/16. The whole character of his disease has thus changed within two weeks. What the future holds for him remains to be seen.

The treatment of trifacial neuralgia by intensive strychnin dosage is not new. Dercum of Philadel-

phia, Dana of New York, and others have advocated its use. The former encouraged the author to use it freely in suitable cases and under the right conditions, which is that of rest, preferably in bed, and with due regard to intestinal activity. This has been combined with quinin by the author in selected cases with good results.

The recent literature contains but meagre data concerning its manifest uses in trifacial neuralgia. Therefore it seems advisable to call attention to it at this time. Also, it seemed wise, in the beginning of this paper, to emphasize the fact that all cases of headache or trifacial irritation are not to be treated by any routine method; and that in selected cases (viz: true trifacial neuralgia) is strychnin in intensive dosage a rational therapeutic agent.

#### PELLAGRA.

By ANSTRUTHER DAVIDSON, M. D., Los Angeles.

I do not intend to enter into any discussion of the theories of causation, pathology or prevalence of Pellagra. These things have been already discussed and recorded in our journals and text books, by abler men of much experience. I wish but to record this case and add a mite of information on the probable causes we meet in California.

M. G., a carpenter, aged 74, complained of diarrhea of five or six years' duration, sometimes not very troublesome but always in some degree present. For the last few months the bowels moved four or five times a day and once or twice at night, the consequent weakness was his only complaint. Last year his hands, he said, "cracked, scaled and bled," once in the spring and again in the autumn. This year they had already scaled once (July, 1912). His hands presented a dark reddish appearance with a slightly raised well defined cuff border, the back of the fingers to the first phalanx was scaling in large plaques. The center of the dorsum showed paler, semicicatricial tissue, as if the scaling had been deeper in that locality. Knee reflex exaggerated, but no other symptoms referable to the nervous system, except marked irritability of temper. I prescribed for his diarrhea and saw him twice in the next ten days. As he did not appear the following week it was found, on inquiry, he had become suddenly much worse and died. He was born in the East but had lived in Los Angeles for about ten years. Unmarried, he lived alone, cooking his own meals, of which cornmeal mush was a daily feature. This case is undoubtedly one of pellagra and one of the comparatively few discovered in Southern California.

This disease has now been found in nearly all the states of the Union and in most European countries. The cause of pellagra has been attributed to the eating of diseased maize and lately by Sambon to infection by a Simulid.

As the disease in many respects resembles a toxic erythema in its appearance, it is not at all improbable that it is a cutaneous reaction from either a special food, or some special metabolic disturbance that is associated with some toxemia. This man, as we see, ate largely of corn, and corn even when not diseased, if much used, is prone to cause cutaneous irritation. The popular idea that corn is heating to the skin is correct, as its use in sufferers from urticaria and acne is prone to increase the inflammatory appearance. Oatmeal has the same tendency. Corn is not much used in the dietary of the people of California and if the cause of pellagra lies therein we may not expect many in this state. If the Simulidae are the source of infection we are well supplied

with probable sources. California has at least six species of the genus, viz:

- S. meridionale, Riley. Fresno.
- S. venustum, Say. Fresno.
- S. bracteatum, Coq. Los Angeles Co.
- S. pictipes, Hagen. Los Angeles Co.
- S. vittatum, Zett. Los Angeles Co.
- S. virgatum, Coq. Los Angeles Co.

I have no acquaintance with the northern part of the state, but I presume the species are even more abundant there than in the south, as the conditions as regards moisture are more favorable to the propagation of the insects.

The most common species here, S. bracteatum, is a small dark fly popularly classed among the gnats as it bites somewhat severely. It is to be found around horses in all the mountain camps or near streams up to 8000 feet altitude in Southern California. They suck the blood from the flanks and inside of the ears of horses and donkeys. The latter especially suffer. Towards the end of the summer the inside of the ears are thickly spotted with blood-stained crusts where the insects have repeatedly fed. If all the Simulidae are capable of transmitting pellagra the disease ought to be fairly common, but in this genus, as in the Culicidae, it may be that only certain species are capable of conveying the infection. Simulium reptans, the species that Sambon seems to think is the communicator of pellagra, has not been found in California so far as I know. Much work must be undertaken before the true cause can be discovered, and it is possible that the Simulidae may be but the intermediate host in conveying the infection from horse or donkey to man.

#### DO NOT FORGET TO SEND US YOUR CHANGE OF ADDRESS PROMPTLY.

#### ORTHOPEDIC TREATMENT OF SPINAL POLIOMYELITIS.

By JAMES T. WATKINS, M. D., San Francisco.

The present paper was delivered in abstract before the California State Medical Society at Del Monte in April, 1912. The time limit set made it necessary to confine its scope to a consideration only of the principles governing the operative side of treatment. Here in the full text other, and if anything more important features of treatment are also given consideration. Occasional repetitions appear in the text where facts were deemed sufficiently important to warrant reiteration.

(Continued from Page 377, September Journal, 1913.)

"1. Do you consider tendon transplantation in properly selected cases a useful and satisfactory operation?"

"The replies were as follows: (40 answers.)

Yes .....	34
Yes, qualified .....	2
Moderate .....	3
In some .....	1

"The opinion is thus definitely expressed that it is a satisfactory and useful operation in suitably selected cases.

"2. Are your end results satisfactory?"

"The replies were as follows: (42 answers.)

Yes .....	13
Yes (in carefully selected cases) .....	7
Moderately .....	7
No .....	7
Sometimes relatively or partially .....	8

"3. Do you prefer tendon-to-tendon suture or periosteal implantation?"

"The replies were as follows: (38 replies.)

Periosteal implantation .....	28
Both methods used .....	5
Tendon-to-tendon suture .....	5

"4. What, in your experience, are the most frequent causes of failure to obtain good results?"

"(As most circulars contained several heads to this reply the total is in excess of the number replying.) (70 answers.)

Improper selection of poor operative plan .....	20
Insufficient after-care .....	17
Failure to overcorrect deformity .....	7
Infection .....	7
Insufficient tension .....	7
Poor technic .....	3
Substitution of weak muscles .....	2
Operation on too young children .....	3
Tendons too short or too poor attachment .....	3
Stretching of tendon, tendon too freely stripped, use of catgut, failure to tunnel properly, pull not straight .....	1 each

"5. Are your more recent operations more satisfactory than your earlier ones were?" (37 answers.)

Yes .....	31
No .....	5
The same .....	1

"From comments made in the replies it seems that this improvement is due to two causes: first, the more careful selection of cases, leading to fewer operations; and, second, improved operative technic and better after-treatment.

"Causes of Failure—The three common causes of failure after tendon transfer may then be formulated as follows, named in the order of their frequency:

"1. Selection of unsuitable cases for operation and insufficient study and analysis beforehand to permit a proper operative plan.

"2. Insufficient or improper after-treatment.

"3. Failure to over-correct deformity before operation for tendon transfer."

Finally, on the nineteenth day of August, of the present year, Lange, in a personal letter, writes me of his method: "During the past ten years—since you were with me—I have learned much additional, and my satisfaction with the results has increased from year to year." With this letter, Lange sent me his latest publications, the last of which appeared in April of this year.

I place this evidence before you to show you that the value of the operation, or group of operations, the principles and technic of which I shall presently detail to you, is no longer a subject for theoretical speculation. They have been tried by many men in many parts of the world. Those men who were specialists in orthopedic surgery have, in an overwhelming majority of instances,

succeeded in relieving their patients by this method and where they have failed, have recorded the same criticism of the causes of failure. They were mistakes of judgment, mistakes of technic, they were not mistakes of the principles involved.

As you know, walking over uneven surfaces necessitates four essential motions of the foot on the leg: up and down motions and motions from side to side. Two or more muscles participate in each of these motions, and each muscle has at least two actions. For example, the extensor of the great toe is also a dorsal flexor and supinator of the foot upon the leg.

The operative treatment of defects consequent upon infantile paralysis presents three phases: first, overcorrection of whatever deformity may be present; second, re-adjustment of the muscular balance; third (this being consequent upon the others though not strictly operative), education of transposed muscles to do the new work required of them.

With the first phase of operative treatment I shall not detain you. We stretch or cut fasciae, tendons, muscles, and ligaments which oppose our reversing the distortion present and overcorrecting it. For example: if the foot is in a posture of equino-varus—what we ordinarily call the "club-foot position"—it should be remodeled into the reverse position of calcaneo-valgus, that is of extreme flatfoot.

Occasionally osteoplastic or bone-cutting operations have to be done. They are, however, to be deprecated.

As has already been said, the method of Lange aims to free the tendon of a healthy muscle from its bony attachment and to re-insert it at that point on the skeleton of the foot where it will best do the work that had been done by the paralyzed muscle prior to the infection. It is not at all essential, however, that the transplanted tendon should have the same insertion as the paralyzed one. For example: no muscle inserts into the upper surface of the cuboid bone: but in those cases where there has occurred a paralysis of the peroneus tertius, or of the long extensor of the toes, or of both, with subsequent dropping of the outer side and front of the foot, the cuboid is the point of selection for the insertion of the muscle to be substituted for the paralyzed one.

In selecting a muscle to replace one that has become paralyzed we look for that one which is anatomically and functionally nearest to the injured muscle. For example, where there is a paralysis of the tibialis anticus, if the extensor of the great toe is found to be healthy, we transfer its insertion to the site of the insertion of the tibialis anticus.

To make the four motions of the foot on the leg, five points on the foot must be provided with active muscles; and these muscles must be able to contract independently of one another. After infantile paralysis, it is usually necessary to sacrifice less important actions, such as those of the toes, in order to obtain enough muscles to supply to these five points. The up and down motions, dorsal and plantar flexion, are more important than the side to side motions. To make the former, a muscle

capable of independent contraction must be attached behind the leg to the site of the insertion of the calf group into the heel, and one each to the outer and to the inner side of the dorsum of the foot in front of the leg.

For adduction, or turning the forefoot inward, a fourth muscle must follow a course approximating that of the tibialis posticus. Like the latter, it must insert at the inner side of the foot, preferably into the internal cuneiform bone. Abduction, or turning outward of the fore-foot, can best be obtained by attaching an independent muscle to the base of the fifth metatarsal bone or its vicinity; a muscle whose course corresponds with that of the pronator brevis.

While it is greatly to be desired that the transferred muscle be anatomically and functionally related to the muscle it is required to replace, in many instances, especially where the disease has caused extensive paralyses, this cannot be accomplished. The transferred muscle must then be brought from a distance. Frequently the tendon of such a muscle is too short to reach the desired insertion. In such a case we are constrained to make up the deficit by prolonging the tendon with silk. Without the frequent and assured use of these *silk tendons*, the successful treatment, by the new method, of deformities consequent upon poliomyelitis must have been limited to a relatively small group of cases. I feel it incumbent upon me therefore to describe these silk tendons more in detail.

It has been the experience of countless surgeons that freshly boiled silk heals kindly within the tissues. It has also been the misfortune of many of us to see silk, which had long been healed in, become the seat of a localized infection; an infection which ceased only with the removal of the silk. To prevent this late infection of silk which had been healed in, Kocher advised a preliminary boiling of the silk in corrosive sublimate. This maneuver successfully combats the possibility of late infection, but has one inherent disadvantage. Bichloride of mercury is such an irritant to the tissues that it can set up a reaction so severe as occasionally to call for the maintenance for some time of post-operative wound drainage. This, of course, opens up a possible path for the ingress of bacteria. To obviate this drawback I boil the bichloride silk in paraffin. This prevents immediate contact between the sublimate and the lately injured tissues.

To do this I proceed as follows: Various sizes of silk, cut in one meter lengths, are loosely rolled upon gauze sponges. They are then boiled for half an hour in corrosive sublimate, 1 to 1000. They are next wrapped in a sterile towel and dried on the radiator for forty-eight hours. If any moisture remains in the silk the preparation will be a failure. Paraffin, with a melting point of 120 F. is next dissolved in a vessel on the hot-water-bath and the dry sterile bichloride silk boiled in it for one hour. Without removing the silk, a cover is put on the paraffin jar. In this way the silk is kept sterile and hermetically sealed until it is needed: at the time of the operation the paraffin is again dissolved on the water bath. The silk can

then be withdrawn by means of a long sterile forceps from the containing jar in desired sizes and amounts. In this way I obtain a silk which is at once antiseptic and bland to the tissues. Whatever silk comes out of the jar stays out. That was my reason for cutting it in meter lengths. It assures the maintenance of the asepsis of my paraffin. The method has the one drawback that as a result of the boiling in sublimate the silk loses approximately one-third of its tensile strength.

To attach the silk to the tendon I employ the procedure advocated by Lange. In order that the tendon may not be split, the silk is threaded upon a round needle. Holding the tendon tense, the needle, threaded either single or double, is carried in a basting stitch, which does not wholly pierce the tendon and its sheath, up one side for an inch or more, then across and down the other side and out again. This leaves the tendon which is to be transferred with either two or four silk strands emerging from it at a point opposite to where it is to be severed. The tendon is now cut across and the distal stump attached ascendingly by a similar stitch to the tendon of the nearest healthy muscle. The proximal stump or its silk prolongation, is carried subcutaneously over to be attached to that bony point where it will be most advantageously placed for the performance of the function of its paralyzed neighbor.

It is the endeavor of most operators to bring the fleshy and tendinous portions of the transferred muscle into one and the same straight line. If, in so doing, it cannot be brought to exert the same pull as the muscle it was meant to replace, this is regarded as one of the limitations of the operation. Under this plan of action, if, for example, a pronator brevis has to be employed to replace a paralyzed tibialis anticus, in a case of paralytic equino valgus, it is carried obliquely forward and downward across the front of leg and dorsum of foot to insert into scaphoid. Such a transferred muscle will correct the equinus or drop-foot but still pull the foot over into valgus. I, at one time, was accustomed to make the mistake of compelling muscle belly and tendon to lie in as nearly straight a line as possible regardless of other considerations. It was based upon a misconception of the mechanics of muscle action. As a matter of fact, as Fischer has conclusively shown, if a muscle is caused by bony projections or by ligaments to deviate from a straight course, its function is always determined by the direction and course of that portion of it which stretches unhindered from one point to another. That is, in the example just employed, the belly of the pronator brevis can be carried at an angle across the front of the leg, and so long as its tendinous portion follows the course of the tendinous portion of the tibialis anticus, it will perform the function of that muscle.

While we need not hesitate to so place the upper portion of the transferred muscle as to enable the lower or tendinous portion to follow the course of the paralyzed tendon, the manner of making the canal in which it must lie is of prime importance.

Adhesions during the post operative six weeks fixation period are unavoidable. Therefore, if the muscle belly is going to be able to contract it is necessary that these adhesions should be to soft movable tissue. Wherever a muscle lies directly on a bone or a dense fascia, and adhesions have taken place between them, that muscle can no longer contract in response to nervous stimulus. Therefore, in tunneling a canal for the new location of the muscle belly, the greatest care should be exercised to keep close under the skin in the subcutaneous fat and areolar tissue. I think that the failure to recognize the importance of this feature of the technic explains no small proportion of the poor results hinted at by some of our colleagues.

Of very great importance is the manner of the attachment of the tendon, or its silk prolongation, to the periosteum, i. e., the new insertion. You will recall, that, in basting the tendon with silk, a round needle was used so as not to split the tendon. The silk is now threaded on a very strong curved needle, with three cutting edges. Using all the force possible without breaking it, the needle is forced through the periosteum at the desired point for the insertion of the transplanted tendon, and, if possible, through the superficial layers of cartilage. Two such basting stitches are sufficient for each silk thread. The foot is then held in maximum overcorrection while the silk threads are drawn tight enough to cause a moderate degree of tension in this position. They are then tied and the knot squeezed flat to prevent its forming a decubitus later. Lovett places his knots beneath the periosteum.

The paralyzed tendon is next shortened. If this does nothing else it will, for a time, relieve the new tendon of part of the strain thrown upon it. It should have been said earlier that skin incisions must be free and so placed as not to lie over the silk tendon, nor its insertion, but sufficiently removed to one side of it, so that with the closure of the wound, the silk will be completely covered in.

The wounds are closed with horse hair and silk-worm gut, the stitches painted with iodine, and a flat pad of sterile gauze applied. Sterile cotton wadding and plaster of paris complete the operation. From the moment that the ends of the silk tendons are drawn tight and tied after they have emerged from the periosteum, till the plaster of paris has hardened, an assistant holds the foot in a position of extreme overcorrection. This relaxes the tension on the new tendon, while it is healing in.

*After-Treatment:* It would be an error, fatal to the successful outcome of the case, to assume that treatment ceased with the healing of the operation wound. A large part of the partial or negative results obtained by some operators must be attributed to a failure to recognize this fact. The writer's procedure is as follows: During the first few days the toes are watched for evidences of vascular disturbances. Some time after the fourteenth day the plaster dressing is removed,

stitches taken out and a plaster of paris negative of the limb taken to be used in making the apparatus to be worn later. The limb is then put back into plaster of paris in the over-corrected position.

About the end of the sixth week, the splint is removed and the patient exercised several times daily in the use of his muscles in their new relations. He is, however, *not allowed out of bed. Under no pretext, with or without splints or braces, is the weight of the body permitted to be borne by feet which have been subjected to operation before the end of the twelfth week.* The writer is in entire agreement with Lange when he says:

"The first two months *after* the removal of the plaster of paris are *much* more critical than the interval during which plaster of paris is worn."

The reason for this is that only after the removal of the cast does true tendon tissue, or, as is more probably the case, scar tissue, under the influence of functional use, begin to surround and embed the silk implantations. At the same time the transposed muscle begins to acquire the strength necessary to the prevention of a relapse. The technic of the exercise treatment, which again finds its application here, has already been described.

For at least *a year* after the removal of the cast protective apparatus must be worn during the day and in some cases at night as well.

I have been asked when is the best time to operate. The reply is one year after the inauguration and systematic protraction of careful, thorough, conservative treatment. As regards the best age to operate: my oldest patient was forty-four years old. On the other hand I do not care to operate upon children who are younger than four years. Their tendons are too delicate and frail.

I cannot close this paper without discussing at some length an operative procedure which occupies an important place in the surgery of poliomyelitis. I refer to the arthrodesis of Albert. An arthrodesis is really a conservative resection of the contiguous ends of bones which make a joint. Its purpose is to destroy motion in a joint by creating an artificial ankylosis. In the group of cases under consideration it finds its greatest usefulness in the treatment of flail joints. The latter occur, when, as the result of a severe invasion, all or nearly all, the muscles about a joint are permanently paralyzed.

Motion which cannot be controlled is certain to lead to the development of a deformity. Therefore it must be limited by check ligaments of silk or got rid of by arthrodesis. In the writer's judgment the silk ligaments are to be preferred for children less than ten years of age. Later than this arthrodesis is the operation of selection.

In an attempt to determine the estimation in which arthrodesis was held by the profession, or rather by those members of it best fitted to form an opinion, Mr. Robert Jones propounded to them a series of eight searching questions. Eighty surgeons replied in detail.

It is deemed worth while to epitomize Mr. Jones' report.

1. "Will you state your opinion of the value of arthrodesis?"

Sixty-seven of the eighty surgeons were in favor of the operation, a considerable number of them holding, however, that it was of special value in selected cases.

2. "At what age is it best the operation should be performed?"

Only fifty-one of the eighty answers received were capable of classification. Of these fifty-one, however, forty-five do not operate under five years of age, and only six do. In other words seven and a half times as many operators preferred to wait till after the fifth year as those who should operate at an earlier date. There was a further majority of two to one who favored deferring the operation till after the eighth year.

3. "Do you take any special precautions to bring about bony union?"

Answers to this question in the proportion of their frequency were:

1. Thorough and careful removal of the cartilage. 2. Good coaptation of the bony surfaces. 3. Long immobilization. 4. Artificial adjuncts: screws, pegs, nails, etc. 5. Chemical adjuncts: phenol, tincture iodine. 6. Special technic.

4. "What joints are most favorable for operation?"

Ankle, 39.  
Shoulder, 4.  
Mediotarsal, 2.  
Sub astragaloïd, 1.  
Knee, 25.  
Hip, 2.  
Elbow, 1.  
Answer vague, 6.

It is manifest, then, that the large majority favor the ankle with knee second and the rest hardly deserving of consideration.

5. "Is the operation useful in combination with tendon transplantation and teno-plasty?"

Forty-seven surgeons replied in the affirmative. There was not enough unanimity in the other replies received to make deductions from them possible.

6. "Have you met with deformity connected with irregular growth as an ultimate result of the operation?"

Seventeen surgeons replied in the affirmative and attributed their imperfect results to the operation being performed at too early an age, or to bad technic or to the fact that the joint was not kept immobilized for a sufficiently long time.

7. "Have you experienced failures, and if so can you tell why?"

Failures are reported by fifty surgeons and attributed variously to nine causes.

1. Operation performed at too early an age.
2. Cartilage not thoroughly removed.
3. Insufficient immobilization.
4. Lack of vitality, especially in paralyzed limbs.
5. Stretching of fibrous unions.
6. Faulty technic.
7. Rotation of sub-astragaloïd joint in case of operations on the ankle.
8. Omission of chemical irritants.
9. Parental neglect.
8. "Can you offer any suggestions in technic

whereby operative procedures may be improved?"

The replies to this question were too numerous and diverse to merit repetition here except in groups.

1. Special operations—of these there were four.
2. Incisions—these were very various.
3. Special technic—these were grouped under twelve heads during operations.
4. Special technic—considered under four headings after the operation.

"The value of tabulated answers to questions is lessened when we realize that some of the correspondents are men of wide experience of the operation, and others who have seldom performed it.

"Those surgeons of large experience speak with no uncertain approbation of its value, and the majority of those who refer to the two operations think arthrodesis of more assured service than teno-plasty or tendon transplantation. Surgeons who speak disapprovingly of the operation have usually operated on the very young or have given the procedure only a limited trial, or have been adversely influenced by early failures."

Of arthrodesis it may be said that the operation should not be performed before the eighth year and that from the tenth year on is the time of preference.

It should be performed only where all or almost all the muscles about a flail joint are paralyzed—that is, a joint on which a tendon transference can not be expected to succeed. It should be performed with the least possible sacrifice of bone. As applied to the lower limb it is expected to render a flail joint strong enough to bear body weight without artificial aids. From what has gone before it is evident that the ankle is the joint most suitable for arthrodesis; next to it comes the knee.

It is well to fix the transverse tarsal joint at the same time with the ankle joint.

Next to a proper age, complete removal of cartilage, good adaptation and long immobilization are requisite to firm union. And conversely, the principal causes of failure may be set down in their order of frequency as too early an age, incomplete removal of cartilage, poor apposition and too short fixation.

The type of case suitable for operation. In determining this it is necessary to bear in mind that paralysis of the nerve centers is not nearly so extreme in cases of infantile paralysis as the groups of muscles affected would lead one to suppose. According to Mr. Jones it is of the utmost importance that the ankle joint should not be fixed until we know "(a) That the paralysis is complete, and depends on the destruction and not on the temporary disorganization of motor cells.

"(b) That at least two years have elapsed in the case of muscles suspected to be completely paralyzed.

"(c) That apparently paralyzed but really over-stretched muscles have first been submitted to appropriate treatment."

#### CONCLUSIONS.

(a) The operation of arthrodesis is of the most value at the ankle.

(b) It should preferably not be performed in children under ten.

(c) The surgeon must satisfy himself before operation is advised that the muscles are hopelessly paralyzed.

(d) The preliminary preparation of the foot by wrench and tenotome must correct all deformity.

(e) The operation must be so planned that the bones be in correct apposition and the deformity is fully corrected.

(f) At the ankle wedges of bone should be taken from the astragalus, never from the tibia.

(g) At the elbow Mr. Jones prefers removing a large diamond-shaped piece of skin to arthrodesis.

(h) Splints should be applied and retained till union is pronounced to be complete. The joint should then be guarded by appliances till the surgeon is satisfied that it is strong enough to bear body weight without yielding.

As a substitute for arthrodesis Barton and Plummer have employed intra-articular silk ligaments, and report themselves to be much gratified with their results. These writers pass strong strands of paraffined silk through a tunnel made first in the end of one bone then through the joint, next through a tunnel in the end of the second bone, and back again through the joint to the point of starting. The ends of silk are then drawn taut and tied.

The reason for carrying the silk through the joint is to set up a copious exudate which, by organizing later, will help to limit the motion in that joint.

It seems probable that this operation, or rather operative principle, will in time find a definite though perhaps limited field of usefulness in the surgery of infantile paralysis.

Mr. Robert Jones has laid stress upon the fact that the central lesion in spinal poliomyelitis is by no means so extensive as the muscular disability would lead one to suppose. He has further emphasized that where paralyses of certain groups of muscles are associated with the persistence of a distortion which causes them to be overstretched, it is proper to maintain the foot for a long time in that posture of overcorrection which will most relax these muscles, in the hope that thereby they will be enabled to regain their ability to contract. To obtain this result, however, the overcorrection should be maintained for months perhaps without once permitting the limb to assume a posture which would again cause stretching of the affected muscles.

To make sure that the desired posture will be maintained, Mr. Jones excises a diamond-shaped fold of the loose skin over the overcorrected joint and, after shortening the tendons, sutures its edges together. When union has taken place, the changes of an immediate or momentary relaxation of the posture will be nil, and in a few months it will be definitely known whether or not the patient presents a muscular defect consequent upon a vicious posture or a central nervous lesion.

If the first should be true, massage and exercises, augmented perhaps by some form of tendon transference, are indicated; if the latter, one knows that when the age limits have been passed an arthrodesis will be needed.

A vast deal has been written of late years on the treatment of spinal poliomyelitis. In the preparation of this paper the writer has added to his own experience gleanings from some sixty-odd previous publications by men distinguished in this special field of endeavor. The most important of these papers he has specifically mentioned. Before closing he would like to bear witness to the benefit received from the repeated perusal of a paper entitled "A Case of Infantile Paralysis," by Professor and Mrs. Earl Barnes, late of Stanford University. A record of heroic achievement and of a deservedly great reward.

## SOCIETY REPORT

### CALIFORNIA ACADEMY OF MEDICINE.

On the evening of August 25th a meeting of the California Academy of Medicine was held, at which the following program was given:

1. Demonstration of an easily constructed case for the display of X-ray plates and lantern slides.

Report of a case of pneumonia, complicated by tympanitis; operation and recovery. T. C. McCleave.

2. A Case of Rhinoscleroma. H. E. Alderson. Bacteriologic findings in above case. E. C. Dickson. Discussed by L. S. Schmitt and L. S. Mace.

3. The Emergency Hospital at the Panama-Pacific Exposition. R. M. Woodward.

## BOOK REVIEWS

**Golden Rules of Gynecology.** By George B. Norberg, M. D., Professor of Diseases of Women and Clinical Gynecology, University Medical College, Kansas City, Mo.; Gynecologist to Kansas City General Hospital, Fellow and Ex-President Kansas City Academy of Medicine. 250 pages, 8 vo. Price, \$2.25. C. V. Mosby Co., St. Louis.

Today the effort is to become proficient in whatever one does, that is, it is a day of specialty. So this small volume hurriedly going through an extensive subject in order to supply a "busy practitioner" with a short-cut to gynecology, finds less room on the book shelf today than it did formerly.

C. B. M.

**Cardio-vascular Diseases.** By Thomas E. Satterthwaite, A. B., M. D., LL. D., Sc. D. Lemski & Buechner, New York, 1913.

In this book the author presents a revised collection of monographs written since 1905 as successive addenda to his "Diseases of the Heart and Aorta," also published by him in medical journals. The newer work on the anatomy and physiology is detailed. Various instruments of precision employed in the study of cardiovascular diseases are described, with their practical application. Several chapters deal with the purely clinical side of cardiology, with especial reference to treatment. There are many illustrations and the author's easy style, with the book's good typography make the reading pleasant.

R. B.

**Genitourinary Diagnosis and Therapy; for Urologists and General Practitioners.** By Dr. Ernst. Translated and edited by Bransford Lewis, M. D. Mosby Co., St. Louis. Price, \$2.50.

This concise work of about 200 pages written by Portner and translated by Bransford Lewis deals mainly with therapy. Here and there we find a brief but stimulating word about diagnosis. The entire catalog of genito-urinary diseases is included in the text, none being too rare for mention. In many places the translator has indulged in parenthetical additions, which would seem to have some practical value. On the whole the most favorable comment to be made upon the book is that it may possibly be useful. In the appendix Sophian has added a very good and short article on the serology and specific therapy of gonococcus infections. The editing is most reprehensible. Prescriptions abound everywhere and in all of them in which the use of the dram sign is manifestly intended the ounce sign appears. This may be attributed to a lack of scruples, for it is quite obvious after a cursory examination of the text that the publisher had none. It is to be hoped that the victims of the many misprints may at least be few. M. S.

**Diseases of the Liver, Gall-Bladder and Bile-Ducts.** By Humphry Davy Rolleston, M. A., M. D. (Cantab.), F. R. C. P. Macmillan & Co., London, 1912. Price \$7.00.

There is, so far as the reviewer knows, no book on diseases of the liver, gallbladder and bileducts in the English language which can compare with Rolleston's work, the first edition of which appeared in 1904. The book is not padded with details of anatomy and physiology, for which the reader is referred to the classical treatises on these subjects. Etiology and pathology are carefully and fully considered, but the great value of the book is due to the most excellent description of clinical manifestations of the diseases discussed. Statistical details have been incorporated and individual case records included in the text, the former enhancing its value as a reference work, the latter making it more interesting reading. To go into a discussion of Rolleston's views, no doubt familiar to the student of the subject, would be of no profit here. The book can be heartily recommended to those whose libraries do not already contain a copy. R. B.

**Diet Lists of the Presbyterian Hospital, New York City.** Compiled, with notes, by Herbert S. Carter, M. D., Assistant Visiting Physician to the Presbyterian Hospital, Associate in Medicine at Columbia University, etc. 12mo of 129 pages. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$1.00 net.

As a result of the increased interest taken in the subject of dietetics by the profession as a whole, we are now being flooded by a large number of books on the subject. This little book is a compilation of diets, many of which were primarily employed in the Presbyterian Hospital, to which have been added other well-known dietary regimes introduced within recent years. It likewise contains a table of standard portions and a table of food values. Unfortunately, like so many other books gotten out these days, it is made to sell. The subject matter of the book could easily have been printed in 50 pages instead of 120, the typical ulcer diet, for example, occupying 15 pages. "The Composition of American Foods" was taken from well-known standard tables and could easily have been left out without in any way impairing the usefulness of the book, this alone occupying at

present over 20 pages. To those interested in hospital dietaries, where a certain amount of routine is necessary, the book will prove of interest. R. B.

**Collected Papers By the Staff of St. Mary's Hospital (Mayo Clinic) 1912.** Octavo of 842 pages, 219 illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$5.50 net.

To recommend a collection of papers from the Mayo Clinic to the attention of the profession is superfluous. Although the book contains no single striking contribution to the advance of surgical science, any observations based on such a wealth of clinical material and made with a sound and sane judgment cannot fail to be of interest. This wealth of material makes the statistical reports of particular value, many of them cannot be paralleled elsewhere. Especially noteworthy are the reports on splenectomy, with a series of 18 cases of splenic anemia, on tumours of the urinary bladder, with 118 cases, and the reports on gland involvement in gastric cancer, a study of 200 resected specimens. Among the pathologic papers may be mentioned Wilson's on tumors of the kidney. He shows the Grawitz tumors to be not hypernephromas, i. e., of adrenal origin, but nesonephromas, originating from remnants of the primitive kidney itself. That all of the Mayo's expositions of their technic are worthy of study goes without saying, among them are papers on cancer of the rectum, jejunostomy, surgery of the spleen, on the opening in the mesocolon in posterior gastrojejunostomy, and Judd's papers on prostatectomy. A number of papers on diagnostic problems and on questions of internal medicine are also of interest and value. L. E.

**Gonorrhea in Women, Its Pathology, Symptomatology, Diagnosis, and Treatment: Together With a Review of the Rare Varieties of the Disease Which Occur in Men, Women and Children.** By Charles C. Norris, M. D., Instructor in Gynecology, at the University of Pennsylvania. Octavo of 521 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$6.00 net; half morocco, \$7.50 net.

This comprehensive work on such an important subject is presented in a most unusual and attractive manner. The author has given us in a volume of some 500 pages an exhaustive, yet highly practical study of this disease, covering the entire field from its earliest history to the present-day methods of laboratory and clinical diagnosis, pathology, treatment and complications. The chapters on sociology and prophylaxis, enumerating various methods of control by governments and communities for the suppression and limitation of this social evil are of particular interest at this time, when civic bodies, municipalities and individuals not alone confined to our professional members are endeavoring to thrash out the subject of the "red plague." There is much food for thought herein expressed. A vast amount of time has been expended by this student in the compilation of many valuable references; and in fact the whole work is a most admirable presentation, for which not only the author and his coworkers deserve great credit, but also the publishers, the paper and type being of the best. The illustrations, while not too profuse, are excellent, mostly from actual photographs. In my opinion, this is a work that will live and should not only be in the library of every specialist in diseases of women, but also on the shelves of the general practitioner. F. P. T.

**A System of Treatment.** Edited by Arthur Latham and T. Crisp English. 4 vols. Macmillan Co., New York, 1912.

This encyclopedic work in four large volumes aims to cover the medical and surgical treatment of all diseases. The purpose of this rather bulky work seems to have been acceptably accomplished and there remains practically nothing that can be added to it to insure completeness. Only the constant changing of additions to our medical and surgical armamentarium can vitiate the value of such a reference work as this, but that is a weakness to which most scientific books are susceptible. Yet, large as this system is, treatment in extenso of any particular disease is not usually given. Another objection might be raised that too much ground is covered and, since the volumes are far from being compact and handy, why not refer to the original sources in each field? General Medicine, the whole scope of Surgery, Tropical Diseases, Eye, Ear, Nose and Throat, Obstetrics and Gynecology, and Skin Diseases, are all covered in these four volumes by men who are each eminent in their specialties. In general the work compels admiration and appreciation but is rather appalling as to bulk and not reassuring as to practical usefulness.

E. H. T.

**Massage—Its Principles and Technic.** By Max Bohm, M. D., of Berlin, Germany, edited, with an introduction, by Charles F. Painter, M. D., Professor of Orthopedic Surgery at Tufts Medical School, Boston. Octavo of 91 pages, with 97 illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$1.75 net.

This is a good book. It is a particularly good book; and none the less so because there are but 71 pages of illustration and text combined, and even then quite three-fourths of the space is taken up with the illustrations. Now a man who has a message and who in these days of endless repetition and tiresome elaboration is so unselfish as to deliver himself of that message in 15 or 16 pages of print may properly be regarded as a public benefactor. Peculiarly is this so when the author is a German; for German medical writers are the most ponderously prolix perpetrators of literary impositions still at large.

An explanation of the author's self suppression is found in the introduction. Without parading the fact he has dedicated his book to his teacher—has written it in reality as a tribute to the memory of that teacher. We quote the last paragraph of his introduction: "The technic of the massage described is essentially that which is employed in Hoffa's Clinic." (Any but a devoted and grieving pupil might have grabbed it for his own and found very near home eminent precedent for so doing. "If I should succeed in preserving after the death of its author an interest in this easily understood form of massage and extend its practice, the aim of this book would be accomplished."

As an illustration of what Bohm might have done we may add that before us is another treatise on massage by a practitioner of eminence, with various dislocated fragments of the alphabet after his name, in which the same ground is covered in some 360 pages, and there are no illustrations at all. But can massage be learned from books or taught in correspondence schools? We think not. If it be possible to learn massage through studying text and illustration we know no book among the many treatises we have read which we would prefer to the one we are reviewing. Nor do we think that our judgment is materially influenced through the fact of our having also been a pupil of Hoffa's. If asked to select one we should recommend Bohm's book.

Massage is in our judgment an art rather than a science. Though it calls for some knowledge of

anatomy and physiology, it is largely intuitive. We can always impart the hand grips and manipulations of massage. But that indefinable, but by the patient always recognizable quality, which differentiates the true masseur from the husky rubber cannot be imparted. If it isn't there, it never will be. Of no group of practitioners of the various branches of the healing art might it so truthfully have been said that while "Many are called, but few are chosen."

J. T. W.

**Diseases of the Stomach, Including Dietetic and Medicinal Treatment.** By George Roe Lockwood, M. D., Professor of Clinical Medicine in the Columbia University: Attending Physician to Bellevue Hospital, New York. In one octavo volume of 624 pages, with 126 engravings and 15 plates. Cloth, \$5.50, net. Lea & Febiger, Philadelphia and New York, 1913.

It is a great pleasure at last to review a book on the stomach which is abreast of modern thought and physiology: one that reflects the author's opinions and experiences, and which deals frankly and honestly with the question of therapeutics instead of piling up a junk-room of methods and drugs many of which were never used to any extent by their originators—let alone by anyone else.

The introduction of brief case histories is also an advantage because the accounts of disease in a text book are always composite pictures that cannot always fit the case in hand. It encourages the man with a puzzling case to find that Dr. Lockwood has seen gastric ulcers with anacidity and no pain, and carcinomas with hyperacidity. He reports his cases as he has seen them and if they do not always conform to theory he cannot help it—the good Lord will not always read Osler.

The new radiologic work is well abstracted and presented in a form that will be welcomed by the man who wants to know what the X-ray can actually do to help him. Screen work is badly slighted but this is the fault of the American roentgenologists as a class. The time has come when a man cannot hope to do stomach work without a good X-ray equipment.

The book is a storehouse of valuable statistics from the experience of the author and from men like the Mayos, Moynihan, etc. Some of the conclusions may be a little startling to those who have not been following the literature of the subject. For instance, that achylia is found so frequently without any symptoms; that hyperacidity can be found in four per cent of cancer cases and twenty per cent of enteroptotics, etc. It is a pleasure to see how fully the author appreciates the interrelations between all parts of the tract; the effect of the appendix and gall-bladder upon the stomach, etc. It is strange, however, that he could still entitle his book "Diseases of the Stomach." Realizing the immensity of the field, the author probably intended to limit himself to this one organ but his book will be referred to as a guide to the diagnosis and treatment of disorders of digestion; and the final chapter on appendicitis, gall-stones, tubes, constipation, etc., shows how impossible it is to draw the line anywhere.

The great clinical importance of atony and gastroparesis would have been more apparent to the reader if chapters X and XVI had been combined or at least put next to each other in the book. Moreover, how can one write of gastroparesis without a discussion of enteroptosis, floating kidney, movable cecum, and the underlying habitus. It is not sufficiently emphasized that the stomach is largely a hopper to pass food to the duodenum as needed and that the small intestine is the real organ of digestion. Gastric and duodenal ulcer are treated together in one chapter, we believe with great advantage. Most of the ulcers are so

near the pylorus that there would seem to be little need for separate articles with separate treatment, etc.

Our pleasure over the book was spoiled for a moment on finding pictures of "the writer's gastro-diaphane," and the "writer's intra-gastric electrode," until we read his humble apology for having devised these instruments and his confession that although he began using them with enthusiasm he has long since given them up.

Pepsin he has not found of service; he has not been able to satisfy himself that atrophin does any good; and sometimes he thinks it is worse than the disease. In several places he advocates the use of silver nitrate without, we think, sufficient warning as to the danger of argyria. It is worthy of note that in but seven per cent of cancer cases did he find a history that might be construed as that of ulcer; and he says, rightly, that one of the most striking phenomena of malignant disease of the stomach is the sudden occurrence of dyspepsia in those of cancer age who have previously been free from all indigestion.

He accentuates the importance of rest in bed in ulcer cases and says that any treatment without this is but half-hearted. He proclaims the need for dietetic care after gastroenterostomy,—some surgeons are proud to have the patient eating everything the day he leaves the hospital. The author is careful about admitting new laboratory tests, and has spared us some of the old ones. It is a relief, for instance, that Teichmann's test for occult blood has at last gone to its rest.

The book is not overloaded with useless and antiquated cuts—heirlooms in the book business. The English is fluent and errors are few. The printer apparently insisted on an "o" in secretin; and he could not see the need for differentiating hyper and hypo-, but otherwise he did very well. The book can be most heartily recommended for all readers.

W. C. A.

#### FRAUDULENT RADIOACTIVE WATERS.

The U. S. Department of Agriculture, through the Bureau of Chemistry, today issued the following warning to the public in regard to the so-called radioactive mineral waters offered for sale in bottles:

"There are indications of the beginning of an attempt to perpetuate a great fraud on the American people through advertising certain mineral waters as possessing radioactivity. These waters, in some cases, are taken from springs the waters of which as they come from the ground do possess certain radioactive properties. Examination of many of these waters by the Department's specialists indicate that whatever radioactivity they possess at the spring is due almost entirely to radium emanation rather than to the presence in the water of any substance possessing radioactivity. These emanations in the form of gas quickly disappear from the water and as a result, after the water has been bottled a short time, it will possess practically no radioactivity. The belief long held by many people that some mineral waters used at the springs are more effective than when bottled has been explained by some authorities on the ground that the beneficial effect of these waters is due to radioactivity. As the radioactivity disappears soon after the water is taken from the spring, any effect due to the radioactivity must be lost in a short time. If the radioactivity of a water in a spring is 100, four days after bottling it will be only 50 and twelve days after bottling 10. In a month it will be practically nothing compared with the original radioactivity of the water at the spring. The public, therefore, is warned to regard with suspicion any water

advertised as possessing radioactivity. As far as the Government's specialists have been able to ascertain, no bottled water, no matter how radioactive it may have been at the spring, retains this radioactivity for any length of time.

"The Department is now investigating a number of the so-called radioactive waters with the object of securing evidence that can be made a basis of prosecution for misbranding. In the past before the Food and Drugs Act was enacted, a number of mineral waters made claim to curative properties which they did not possess and succeeded in creating a misplaced confidence on the part of the consumers. This was particularly true of a number of imported waters which were sold extensively in the United States with a statement on the bottle that they were wonderful or magical cures for all sorts of incurable or chronic ailments. The Treasury Department, acting in co-operation with the Department of Agriculture, now refuses admission to the country of foreign waters labeled so as to mislead consumers as to their real or curative properties. The Department fears that unless the public is warned that the fraudulent trade in so-called radioactive waters will develop, just as the fraudulent trade in other mineral waters was developed to the point where people with strong imaginations will supply their bottlers with all sorts of testimonials asserting that these supposed radioactive waters have effected wonderful cures."

#### SCHOOL FOR HEALTH OFFICERS.

Beginning this fall Harvard University and the Massachusetts Institute of Technology are to maintain in cooperation a School for Public Health Officers. The facilities of both institutions are to be available to students in the School and the Certificate of Public Health (C. P. H.) is to be signed by both President Lowell and President MacLaurin.

The object of this School is to prepare young men for public health work, especially, to fit them to occupy administrative and executive positions such as health officers or members of boards of health, as well as secretaries, agents, and inspectors of health organizations.

It is recognized that the requirements for public health service are broad and complicated, and that the country needs leaders in every community fitted to guide and instruct the people on all questions relating to the public health. To this end, the instruction of the new School will be on the broadest lines. It will be given by lectures, laboratory work, and other forms of instruction offered by both institutions, and also by special instructors from national, State, and local health agencies.

The requirements for admission are such that graduates of colleges, or technical and scientific schools, who have received adequate instruction in Physics, Chemistry, Biology, and French or German, may be admitted to the School. The medical degree is not in any way a pre-requisite for admission, although the Administrative Board strongly urges men who intend to specialize in public health work to take the degree of M. D. before they become members of the School for Health Officers.

The Administrative Board which will conduct the new School is composed of Professor William T. Sedgwick, of the Massachusetts Institute of Technology; Professor Milton J. Rosenau, of Harvard; and Professor George C. Whipple, of Harvard. Professor Rosenau of Harvard has the title of Director, and the work of the School will be under his immediate supervision.

**THE SAN FRANCISCO POLYCLINIC AND  
THE SAN FRANCISCO COLLEGE OF  
MEDICINE COMBINED.**

The general tendency to consolidate for more effective work has made a commencement in our city by the announcement of the union of two post graduate schools. The S. F. College of Medicine, while the youngest of teaching institutions, has been amongst the most successful. Since its incorporation in 1905 it has matriculated some three hundred students. It is from now on to continue its special courses in conjunction with the older institution in the new college building that opens its doors this month. San Francisco from its position, wealth of clinical material, and advantages of climate, should be the post graduate center of the entire far west. It is to be hoped that this may now be realized, and that the example of union for the common good may prove contagious and lead to further combinations among our all too numerous medical schools.

**FORM OF DECLARATION REQUIRED OF  
IMPORTERS OF COCAINE.**

The U. S. Department of Agriculture, acting under Treasury Decision No. 33456, dated May 29, 1913, with relation to the importing and use of cocaine, coca, and their derivatives or preparations containing them, has prepared and has ready for issue at all of its branch laboratories and at the Bureau of Chemistry in Washington, copies of the declaration form which must be subscribed to by all importers of and dealers in these products. These blanks will be furnished free on request from importers and dealers.

The purpose of the new system of declaration is to prevent the indiscriminate and promiscuous use of cocaine, coca, and derivatives or preparations containing them, on the ground that these things are dangerous to the health of the people of the United States. At the same time, under this declaration entry of these drug products is permitted for legitimate use in medicine. The form of declaration requires the importer to declare under oath that the import is designed for use in a manner not dangerous to health, and that he will secure from each and every person, firm or corporation to whom the import is sent, the same declaration as to the use the recipient will make of that portion of the import sold or sent to him. In addition, the importer must agree to allow accredited Government inspectors to go over statements from persons to whom he has supplied the goods, and at the end of the year the importer must report to the Bureau of Chemistry the amount of these products that he has on hand on the 1st day of January in each year.

**NEW AND NONOFFICIAL REMEDIES.**

Since publication of New and Nonofficial Remedies, 1913, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Digipuratum Ampules.—Each ampule contains 1 cc. of a digipuratum solution, equivalent to .1 gram digipuratum. Knoll and Co., New York (Jour. A. M. A., Aug. 23, 1913, p. 668).

Digipuratum Solution for Oral Use.—Vials containing 10 cc. digipuratum solution, each cc. representing .1 gram digipuratum. Knoll and Co., New York (Jour. A. M. A., Aug. 23, 1913, p. 568).

Tetanus Antitoxin.—For description of Tetanus Antitoxin see N. N. R., 1913, p. 218. H. M. Alexander and Co., Marietta, Pa.

Acne Vaccine.—For description of Acne Vaccine see N. N. R., 1913, p. 221. Schieffelin and Co., New York.

Pertussis Vaccine.—Pertussis Vaccine is a *Bacillus Bordet-Gengou* Vaccine. Schieffelin and Co., New York.

Meningococcus Vaccine.—For description of Meningococcus Vaccine see N. N. R., 1913, p. 223. Schieffelin and Co., New York.

Coli Vaccine (Polyvalent).—For description of *Bacillus Coli* Vaccine see N. N. R., 1913, p. 221. Schieffelin and Co., New York.

Gonococcus Vaccine (Polyvalent).—For description of Gonococcus Vaccine see N. N. R., 1913, p. 223. Schieffelin and Co., New York.

Pneumococcus Vaccine (Polyvalent).—For description of Pneumococcus Vaccine see N. N. R., 1913, p. 224. Schieffelin and Co., New York.

Staphylococcus Vaccine (Polyvalent).—Schieffelin and Co., New York.

Staphylococcus Albus Vaccine (Polyvalent).—Schieffelin and Co., New York.

Staphylococcus Aureus Vaccine (Polyvalent).—For description of Staphylococcus Vaccine see N. N. R., 1913, p. 225. Schieffelin and Co., New York.

Streptococcus Vaccine (Polyvalent).—For description of Streptococcus Vaccine see N. N. R., 1913, p. 226. Schieffelin and Co., New York.

Typhoid Vaccine.—For description of Typhoid Vaccine see N. N. R., 1913, p. 227. Schieffelin and Co., New York.

**BOARD OF MEDICAL EXAMINERS, CALIFORNIA, AUGUST, 1913, SESSION.**

Passed.

Calif. Eclectic Med. Coll., Cal.; (5, 22, 1913), 82.2, 90.4.  
 Coll. of Phys. & Surgs., S. F., Calif.; (6, 8, 1911), 75; (6, 6, 1912), 76.5\*\*; (6, 5, 1913), 87.3.  
 Hahnemann Med. Coll. of the Pac., Calif.; (4, 25, 1912), 75.\*; (4, 25, 1913), 77, 78.8, 79.9, 81.5, 82, 84.5, 87.5, 87.5, 90.3; (6, 19, 1913), 84.4.  
 Leland Stanford Jr. Univ., Calif.; (5, 19, 1913), 80.1, 84.2, 86.5, 88.6, 89.5, 90.9, 91.1.  
 Oakland Coll. of Med. & Surg., Calif.; (5, 22, 1913), 81.1, 84.4, 84.8; (5, 27, 1909), 86.3.  
 Univ. of Calif., Med. Dept., S. F., Calif.; (5, 13, 1913), 86.1, 88.2, 90, 90.4, 91.3, 93.8, 93.9.  
 Univ. of Calif., Med. Dept., L. A. Calif.; (6, 10, 1913), 87.2, 88.9; (6, 20, 1912), 99.2.  
 Univ. of So. Calif. Coll. of Phys. & Surgs., Med. Dept., Calif.; (6, 14, 1906), 77.9; (6, 12, 1913), 79.8, 80.2, 80.7, 81.7, 82.7, 83.4, 84.4, 85, 86.4, 86.6, 87, 87.9, 89.3, 90, 91, 91.6, 91.7, 92, 92.7, 92.9.  
 Cleveland Univ. of Med. & Surg., Ohio; (3, 23, 1897), 75.2 plus 5, 80.2\*.  
 Coll. of Phys. & Surgs., Chicago, Ill.; (4, 21, 1896), 83.1 plus 5, 88.1\*.  
 Denver & Gross Coll. of Med., Colo.; (5, 18, 1906), 92.2.  
 Denver Homeopathic College, Colo.; (4, 21, 1904);  
 Denver and Gross Coll. of Med., Colo.; (5, 18, 1906), 75.  
 Harvard Med. Sch., Mass.; (6, 28, 1911), 84.9; (6, 19, 1913), 87.8.  
 Hospital Coll. of Medicine, Ky.; (6, 27, 1901), 86.4 plus 5, 91.4.  
 Johns Hopkins Med. Sch., Md.; (6, 11, 1913), 87.3; (6, 12, 1906), 88.4.  
 Marion-Sims Coll. of Medicine of St. Louis, Mo.; (4, 8, 1898), 76.1 plus 5, 81.1.  
 Medical Coll. of Indiana, Ind.; (2, 26, 1885), 75, plus 10, 85.  
 Medical Sch. of Maine; (7, 6, 1901), 80.5 plus 5, 85.5.  
 N. Y. Med. Coll. & Hosp. for Women, N. Y.; (5, 14, 1895), 81.6 plus 5, 86.6.

Northwestern Univ., Evanston, Ill.; (6, 20, 1901), 90.6 plus 5, 95.6.  
 Ohio Miami Med. Coll. Univ. of Cinn., Ohio; (6, 1, 1912), 76.4.  
 Omaha Med. Coll., Nebr.; (4, 4, 1895), 75.3 plus 5, 80.3\*\*.  
 Rush Med. Coll., Ill.; (6, 18, 1902), 80.3 plus 5, 85.3; (5, 23, 1894), 82.7 plus 5, 87.7; (—, —, 1898), 88.8 plus 5, 93.8.  
 St. Louis Coll. of Phys. & Surgs., Mo.; (3, 23, 1898), 82.7 plus 5, 87.7.  
 St. Louis Univ. Sch. of Med., Mo.; (6, 5, 1913), 87.3.  
 Univ. of Buffalo, N. Y.; (5, 28, 1909), 79.9.  
 Univ. of Colorado, Med. Dept., Colo.; (6, 4, 1913), 84.7, 88, 91.2; (6, 7, 1900), 82.7 plus 5, 87.7.  
 Univ. of Ill., Coll. of Med., Med. Dept., Ill.; (6, 4, 1912), 83.5; (6, 5, 1906), 86.1; (6, 10, 1913), 90.3.  
 Univ. of Indianapolis, Med. Dept., Ind.; (3, 31, 1897), 84.1 plus 5, 89.1.  
 Univ. of Louisville, Sch. of Medicine, Ky.; (7, 7, 1903), 89.1 plus 5, 94.1.  
 Univ. of Mich., Dept. of Med. & Surg., Mich.; (6, 18, 1908), 87.1.  
 Univ. of Nashville, Med. Dept., Tenn.; (3, 27, 1902), 87.5 plus 5, 92.5\*.  
 Univ. of Pennsylvania, Pa.; (6, 18, 1902), 78.1 plus 5, 83.1; (6, 8, 1898), 83.7 plus 5, 88.7; (6, 18, 1913), 88.7.  
 Univ. of Pittsburgh, Pa.; (6, 14, 1911), 75.\*.  
 Univ. of Vt., Med. Dept., Vt.; (6, 28, 1913), 84.6.  
 Vanderbilt Univ., Med. Dept., Tenn.; (5, 20, 1913), 78.5, 84.5, 86.3, 87.4.  
 Washington Univ., Med. Dept., Mo.; (5, 25, 1905), 77.5.

#### Failed.

Calif. Eclectic Med. Coll., Calif.; (5, 22, 1913), 64.2, 66.9, 70.1, 72.9.  
 Coll. of Phys. & Surgs., S. F., Calif.; (6, 8, 1911), 29.4\*.  
 Cooper Med. Coll., S. F., Calif.; (5, 9, 1906), 72.5.  
 Univ. of So. Calif., Coll. of Phys. & Surgs., Med. Dept., Calif.; (6, 12, 1913), 72.2.  
 National Univ., St. Louis, Am. Med. Coll., Mo.; (6, 2, 1913), 69.4.  
 Baltimore Med. Coll., Md.; (5, 31, 1913), 63.6.  
 Barnes Med. Coll., St. Louis, Mo.; (4, 3, 1893), 54.5 plus 10, 64.5.  
 Bowdoin Med. Coll., Maine; (7, 8, 1896), 64.3 plus 5, 69.3\*.  
 Chicago Coll. Med. & Surg., Ill.; (5, 19, 1913), 59.9.  
 Eclectic Med. Coll., Cinn., Ohio; (5, 12, 1913), 70.7.  
 Hahnemann Med. Coll. & Hosp., Ill.; (3, 25, 1882), 40.4 plus 15, 55.4; (4, 26, 1900), 70.8 plus 5, 75.8; fell below 60% in one subject.  
 Med. Coll. of the First Higher Coll. of Tokyo, Japan; (12, 27, 1892), 68 plus 10, 78; fell below 60% in one subject.  
 Ohio Med. Coll., Cincin., Ohio; (3, 8, 1887), 64. plus 10, 74.  
 Royal Coll. of Phys. & Surgs., Edinburgh & Glasgow, Scotland; (7, —, 1911), 71.  
 Royal Univ. of Naples, Italy; (12, 18, 1903), 59.2\*\*\*\*.  
 Univ. Med. Coll. of Kansas City, Mo.; (5, 14, 1909), 59.8.

#### Osteopathy—Passed.

Am. Sch. of Osteopathy, Mo.; (6, 2, 1913), 87.1.  
 Los Angeles Coll. of Osteopathy, Calif.; (6, 1, 1911), 75.\*\*; (1, 30, 1913), 75, 75.7, 77.6\*, 78.7, 80, 81.3\*; (6, 2, 1910), 75.\*; (1, 26, 1912), 75.6, 80.; (6, 4, 1913), 75.7, 76.3, 77.2, 78, 78.9, 79., 80.9, 82.3, 82.4, 82.8, 82.9, 83.9, 84.8, 86.9, 88.4; (also a graduate of Am. Sch. Osteop., Mo., 6, 14, 1906), 89; (6, 6, 1912), 77.3, 79.9, 81.\*\*; only one subject required.  
 Pacific Coll. of Osteopathy, Calif.; (6, 19, 1913), 77.1; (6, 15, 1911), 78.2\*\*\*; (6, 19, 1913), 81.9, 86.8.

#### Osteopathy—Failed.

Am. Sch. of Osteopathy, Mo.; (6, 1, 1909), 50.9.  
 Los Angeles Coll. of Osteopathy, Calif.; (1, 30, 1913), 39.5, 66.; (6, 4, 1913), 61.4, 61.5, 66.3, 67.4, 70.4; (6, 6, 1912), 64\*; only one subject required; (also graduate of Am. Sch. of Osteop., Mo.; 6, 14, 1906), 70.9\*, 72.1\*; (6, 1, 1911), 67.8\*.  
 Pacific Coll. of Osteopathy, Calif.; (6, 20, 1912), 60.6\*, 71.2\*, 73.\*\*.  
 Philadelphia Coll. & Infirmary of Osteopathy, Pa.; (6, 22, 1905), 65.5\*\*.

\*Taken before.

#### New Licentiates—Medical Doctors.

Allen, W. B.; Aller, D. I.; Allgover, H. A.; Avery, L. G.; Barnes, O.; Barnes, P. D.; Barnett, G. DeF.; Bayley, A. J.; Beard, J. L.; Black, W. L.; Blake, W. P.; Bostick, J. B.; Bowman, K. M.; Breier, C. A.; Bronson, E.; Brown, C. E.; Burney, T. M.; Burton, F. A.; Bybee, A.; Carter, R. A.; Catton, J. H.; Chamley, O. D.; Cline, H. X.; Coleman, E. P.; Cook, R. C. N.; Cornell, E. H.; Cox, H. T.; Crawford, O.; Cress, W. W.; Crispin, E. L.; Curtiss, W. H.; Davis, H. J.; Dearborn, R. R.; Dietrich, H.; Dixon, H. B.; Donnell, R. H.; Duns-moor, R. M.; Ellinwood, L. McD.; Everly, W.; Farnsworth, D. C.; Fearon, W. M.; Felch, M. F.; Fisher, C. A.; Fleissner, C. M.; Fleming, S.; Fox, W. F.; France, G. D.; Fuller, G. W.; Ginsburg, S. S.; Goff, A.; Haggert, F. S.; Harbaugh, R. W.; Harding, M. C.; Hayes, D. J.; Henke, G. B.; Herlihy, J. S.; Hill, E. W.; Howson, C. R.; Jones, E. W.; Jones, Robt. Melvin, Jr.; Jones, Robt. Maxwell; Kelley, G. A.; Kindig, Z. Z. M.; Leach, C. N.; Lucey, D. D.; Mack, C. W.; Mackenzie, W. W.; Makinson, F. R.; Marks, S. H.; May, E. S.; McAlister, O. O. T.; McCrea, A. B.; Mehrtens, H. G.; Mitchell, W. E.; Morgan, J. D., Jr.; Munger, A. L., Jr.; Murayama, M.; Naylor, W. A. A.; Nicholson, J. W.; Palmer, H. C.; Pierce, H. F.; Fringle, J. T.; Rea, T.; Reeves, J. W.; Risdon, R. C.; Rodenbaugh, F. H.; Rogers, A. R.; Ruggles, H. E.; Safely, G.; Sands, R. A.; Schultz, W. W.; Schwartz, D. Z.; Seward, L. S.; Shattuck, A.; Smith, R. L.; Stolle, F.; Tranter, C. L.; Van Vorhis, J. H.; Von Geln-dern, C. E.; Warner, H. E.; Webster, D. P.

#### New Licentiates—Osteopaths.

Aaronson, J. A.; Arthur, M. A.; Balfe, M. E.; Borden, T. L.; Brigham, H. B.; Bryant, J. J.; Cleaver, J. M.; Coffey, E. K.; Collins, F. T.; Dilley, A. E.; Ellsworth, G.; Faris, J. B.; Gass, L. D.; Giesy, N. W.; Girvin, P. S.; Gotham, T. B.; Hansen, J. H.; Hansen, L. L.; Hebb, F. E.; Hodgman, F. H.; Kavanaugh, B.; Lynch, C. G.; MacKinnon, S. D.; Reeks, L. D.; Ross, A. McR.; Swortzel, W. R.; Vollbrecht, W. J.; Waldo, M. J.; Waldo, R. E.; Willitt, N. E.; Williams, M. L.; Wilson, S. M.; Woods, R. A.; Zinn, E. G.

#### NEW MEMBERS.

Greene, Frances Marx, Massachusetts.  
 Muller, F. W., San Diego, Cal.  
 Leavitt, E. I., San Francisco.  
 Dickenson, C. F., Fresno.  
 Jenson, C. A., Ventura.  
 McNaught, H. Y., San Francisco.  
 Barkan, Adolph, San Francisco.  
 Tobriner, Oscar, San Francisco.

#### RESIGNED.

Yacoubi, H. B., Pasadena.  
 Carter, R. S., San Diego.

#### DEAD.

Ray, C. Wilbor, Los Angeles.  
 Spaulding, Jane E., Santa Barbara.  
 Laird, Mary Jane, Sanger.  
 Hicks, W. T., Elk.  
 Petersen, Fred J., Camp Meeker.  
 Forline, Henry Harrison, Tustin.  
 Fraser, J. C., Pasadena, Cal.  
 Wigand, Theodore, San Francisco.